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MAINTENANCE SERVICE CONTRACTING

submitted in partial fulfillment
of the requirements for the
degree of
Master of Engineering

by

Gregory R. Long

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INTRODUCTION

This paper discusses the different types of contracts available to practitioners in the field of facilities maintenance. This will be done in several steps. The first will be a general definition of maintenance in this context. Second will be an overview of the field of maintenance service contracting. The next step will discuss the advantages and disadvantages of contracting for maintenance services versus performing them with in-house personnel. This is followed by a grouping of several specific factors which should be considered when determining whether or not to contract for a particular function. At this point the different types of contracts available will be outlined.

The final section deals with the process involved in determining which type of contract best fits all of the requirements. This section includes an example drawn from a maintenance service contract which illustrates the process described.

SCOPE

This discussion of maintenance service contracting will not include either the award or the administration of the contract but will be limited to the process leading up to the decision of which type contract best fits the situation.

Due to the limited amount of literature available on this subject, the bulk of the research done for this paper was from sources applicable to or familiar with maintenance service contracting in the United States Navy's Civil Engineer Corps. However, the basic principles outlined here should be applicable to any contracting situation.

CONSTRUCTION VS. SERVICE

First, a practical concept of exactly what constitutes maintenance service contracting must be established. To do this it is necessary to contrast service work with construction work. Construction is defined in reference 3 as "construction, alteration, or repair of buildings, structures, or other real property." The phrase "buildings, structures, or other real property" is generally considered to be all inclusive of the facilities management area. It includes utilities, grounds, streets, etc. Some examples of this type of work would be new streets and new buildings.

Service is defined in the same reference as "the time and effort of a workman whose primary purpose is to perform an identifiable task rather than to furnish an end item of supply." Some examples of this are housekeeping services or routine recurring maintenance.

The only work which is appropriate for service contracting as discussed in this paper is that which fits into the second of the two definitions given. All work which

fits into the first definition is not appropriately contracted for using the methods to be discussed.

CONTRACT VS. IN HOUSE

There are several advantages to be realized from contracting out work. It must be remembered, however, that there are always offsetting disadvantages which must be taken into account. The key is to be able to determine which of each are applicable to the situation at hand and deciding which side outweighs the other. Following will be a listing of several advantages and disadvantages to the general notion of contracting for maintenance services. Some of these are listed in references 1 and 3 while some are a result of personal experience. They are listed in no particular order.

Advantages

1. Funds are obligated immediately upon executing the contract. This is especially applicable to end-of-the-fiscal-year spending schedule problems.

2. The work performed is generally inspected much more critically than if it is performed by in-house personnel.

3. The more specialized skill and expertise of the contractor population can be realized.

4. In many cases the competitive bidding process results in a cost savings. This is a two-edged sword however. In the case of a poorly prepared or administered

contract, the final cost may be many times that which in-house labor would have been.

5. Much of the day-to-day administrative burden is shifted to the contractor.

6. The maintenance workload of in-house forces is reduced, which allows more flexibility and time for crisis management or "fire-fighting"

7. Contracting eliminates maintenance force responsibility for routine or cyclical maintenance which allows the maintenance force to better respond to emergencies. Conflicts can, however, develop between contractor and in-house personnel concerning who has what responsibility.

8. Contracting reduces the number of employees on the payroll. This is particularly important to government agencies which are operating under "ceiling point" constraints.

Disadvantages.

1. Contract administration and inspection costs are an added expense that must be considered.

2. Personnel, time, and money are required to prepare the contract for advertising.

3. There is a potential for new labor problems.

4. Loss of flexibility in assigning personnel and responding to emergencies becomes a problem.

5. Having a non-responsible contractor win the job and perform at a barely acceptable level becomes a reality.

6. There is difficulty in shifting from in-house to contract or vice versa. Once the work has gone contract, it will be difficult to reinstate in-house personnel.

7. Loss of back up ability and corporate knowledge of the facility may occur. This is particularly important with older facilities.

CONSIDERATIONS FOR CONTRACTING OUT

In addition to the general advantages and disadvantages listed above, there are several specific considerations which must be reckoned with. (3) These have been separated as being either internal (from within the contracting organization) or external (not under the control of the contracting organization).

INTERNAL

Personnel: What are the short and long term requirements for personnel in each skill area being considered? Is there sufficient workload to justify maintaining those required skill areas?

Management: Do sufficient contract management and inspection skills and experience exist in-house to insure proper contracting procedures and surveillance? Is the number of staff personnel required available? Will the result of the contracting be to smooth existing or to create new workload peaks throughout the year?

Resources: Do the proper tools, equipment, materials, office space, workshop space, warehouse space, etc., exist in sufficient quantity to perform the function adequately?

Time: Is the required maintenance time-sensitive? In other words, is it such that a contractor would be required to maintain personnel on site at all times? If so, then the cost of a contract would be driven up considerably. Will it be periodic, cyclical, continuous, or on an as-needed basis?

Risk: What risk should be assumed by the contractor, what by the owner? What is the uncertainty of the quantities and the nature of the work to be contracted for?

Flexibility: How much flexibility is required by management to be able to change the work in type, quantity, priority, etc?

EXTERNAL

Contractors: Are there enough contractors who specialize in the field being contracted for to ensure that the bids will be both responsive and responsible? Is it a function which requires specialization and, if so, are there specialty contractors who could be expected to bid?

Regulations: What regulatory agencies have overview of the agency or function? What special regulations will apply to either the function being contracted or the agency or industry doing the contracting?

COMMON EXAMPLES

There are many different functions and services within any organization which lend themselves to contracts, some because of their labor-intensive nature and others because of several other factors discussed later. The following is a list of services which are often contracted: (3)

HVAC
HVAC control systems
Custodial
Grounds maintenance
Elevators
Boiler Maintenance
Glass Cleaning
Pest Control
Solid Waste Services
Street Lighting
Street Cleaning
Equipment Repair
Utility Distribution Systems
Relamping
Fire Alarm Systems

This list is not all-inclusive but is presented to demonstrate what types of services have been successfully contracted.

Some of these areas are contracted to such an extent that the Naval Facilities Engineering Command has prepared type specifications for service contracts in them. They are as follows: (3)

Fire Protection
Guard Service
Transportation Operations and Maintenance
Custodial
Grounds Maintenance
Surfaced Area Maintenance
Telephone Operations and Maintenance
Refuse Collection and Disposal

Bus Service
Insect and Rodent Control
Family Housing Maintenance
HVAC Maintenance
Buildings and Structures Maintenance
Hazardous Waste disposal
Rail Facilities Maintenance
Elevator Maintenance
Waterfront Structures Maintenance
Electric Distribution
Heating Plants and Systems
Electric Plants
Sewage Plants
Water Plants
Refrigeration Systems

As more areas are being successfully added to the list of those being contracted, the list of type specifications will also grow. The existence of a type specification does not mean that a contract manager desiring to contract for a particular function must only obtain a copy of the type specification and advertise it as a contract. The type specifications cover a function in general terms and tend to have several alternative sections dealing with any one aspect of the function. It is the responsibility of the user to tailor the specification to the particular situation at hand. The type specification will hopefully prevent the manager from making the same mistakes that have been made before.

LEGAL ACTS

When any type of contracting is being contemplated, one factor which must be considered is the additional legal requirements and restrictions which have been placed on contracting. Appendix 1 contains a table which lists both

social and economic programs which must be considered when contracting in the military. This listing of 44 different acts was extracted from references 1 and 3. Although some of these programs are germane only to the military or other federal agencies, the listing should improve one's understanding of the significant regulatory burden involved in maintenance contracting.

As can be seen from the listing, most of the regulatory acts serve a definite and useful purpose. However, there are some which might be considered trivial, while others may seem ridiculous to some persons. Nevertheless, each must be carefully taken into account. In addition, of course, each company or governmental agency has its own rules, regulations, and policies which must be followed. It seems almost inevitable that some conflicts will occur between the various groups of rules. Unfortunately, today's litigious society seems more likely to increase, rather than ease, the regulatory burden facing contract professionals. What this means to the manager contemplating contracting for some function is that there is a definite need for a thorough legal review of both the process being used and the end result of that process prior to any contract being advertised.

CONTRACT TYPES

There are primarily four different types of contracts which will be considered. (11,12) Although there are many more contract formats available, these four form the basis for virtually all of the others. The four types are:

1. Fixed price lump sum contract.
2. Indefinite quantity contract.
3. Requirements contract.
4. Level of effort contract.

The first type, the fixed price lump sum contract, is the most common and by far the most desirable to owners. (12) The owner defines what end product or result is required along with the quantity and quality desired. This is then written into a performance-oriented specification.

A performance specification is one where the contractor is told what to do but no mention is made of how to do it. Reference 7 uses the illustration of ordering food in a restaurant to demonstrate the difference. If someone orders a steak medium rare and accepts or rejects it based on whether or not it is cooked properly, then he is using a performance-oriented criterion. If, on the other hand, he orders a steak and proceeds to the kitchen to supervise the cooking of it, he has accepted responsibility for how well it is cooked and has no basis for rejecting it. In an example from personal experience, a contract for runway

cleaning on a small island in the Pacific specified only that the runways be swept. When the contract was written, it was expected that the contractor would ship in a mechanical street sweeper to do the work. The successful bidder, however, had no such intentions. He went out to the local population and hired about 50 people at $0.90 per hour and gave each a push broom. After a week's work, the runway was swept satisfactorily at a much lower cost than the shipping bill would have been for one piece of equipment. Of course this unusual solution wouldn't work well in industrialized nations with high labor rates, but under the circumstances it was an ideal method. The contractor met the end result that was required in the specifications but used a method that was in no way envisioned by the owner.

The advantages of the fixed price lump sum contract are significant. First, the contractual risk is borne by the contractor. Assuming the performance is well defined and the specification is well written, all the owner has to do is inspect the results to see that they conform to the specification. Whether the contractor is being efficient or not is of little concern to the owner. Also the administration of the contract becomes much easier. Contract performance is generally easy to break up into definable segments on which payment can be based. In the runway example above, when the contractor completes the sweeping of 3000 feet of the 6000-foot runway, then he is entitled to 50% of the contract price. This simplicity leads to fewer

documents and less paperwork for both the contractor and the contract administrator.

There are also significant problems associated with this type of contract. Before the contract is even awarded there is the potential for disaster when the definition of work required is written. If this work definition is not exactly what the owner wants, then the best contractor will have problems. Or if the quantity is based on historical data that are not accurate or have a built-in bias because of the method of bookkeeping used, then the owner will surely find all of the errors after award when the price of those errors has been multiplied many times. Fixed price lump sum contracts that were inadequately researched or prepared often result in claims submitted by the contractor for these types of problems.

Another potential problem for maintenance service contracts using this format comes when the work is being performed on a new facility. For example, a company has constructed a new hospital and wants to contract for the maintenance of the HVAC system since it is a fairly sophisticated system. After moving into the facility and awarding the maintenance contract some minor part of the HVAC control system breaks. The maintenance contractor is called to replace it under the terms of the contract and he refuses. His refusal is based on the contention that the part should be covered under the warranty and therefore

should be replaced by the installing contractor. The installing contractor is contacted and states that his responsibility ended when the maintenance contractor opened the cabinet to work on the part in the first place. The result is that the company finds itself trying to settle a dispute between two contractors while the HVAC system remains down. The point is that the line between warranty and maintenance is very thin and becomes more so when the maintenance is under contract. This requires a much more active role by the contract administrator than was perhaps intended.

The second type of contract to be considered is referred to as an indefinite quantities contract. With this kind of contract a fixed unit price is agreed on along with a minimum quantity to be ordered. Note that no maximum quantity is specified. The indefinite quantity contract is often called a unit price contract since a single unit price forms the basis of the contract documentation. The difference between what is commonly called a unit price contract and the indefinite quantities contract is the minimum quantity specified. The indefinite quantities contract is only used when the item of maintenance to be performed has a commonly used unit of measure. For example, all roofing for single family housing is done by the square. So any contractor quoting a price for roofing work would do so by the square. In a case such as this an indefinite quantities contract would be acceptable.

The advantage of this contract is that the exact quantities that will be ordered need not be known prior to awarding the contract. All that must be known is the minimum amount that will be required.

The problems associated with the unit price contract all come after the award during the contract administration phase. In the first place there must be a system in place to insure that the quantity ordered is the same as what is actually performed. Variations between the quantity ordered and quantity performed can occur in several way. These include not knowing exactly what work needs to be done, not inspecting after the work is reported as complete, or occasionally because of collusion between the person ordering the work and the person performing it. Although all of these are easy to prevent and control, there are a significant number of claims which result from abuses of these types. (11) Another significant problem associated with these contracts is that funding is usually only obligated for the minimum amount of work specified in the contract. This is either not understood or ignored by some contract administrators since quantities beyond the minimum are frequently ordered without first reserving the additional funds required to pay for the work. In most cases this can be easily remedied by obtaining the fund reservation after the work is ordered but before it is paid for. However, this is becoming more and more difficult as budgetary restraints are getting tighter all the time. If

the funds cannot be found to cover the work ordered, then the contractor has performed work that he will not be paid for, and the contract administrator will most probably be looking for work elsewhere. Another potential problem is that of unbalanced bids. If the bid does not accurately reflect the work to be performed, then the payment cannor be correct either.

It should also be remembered that a contract of this type used as described above guarantees a certain minimum amount of work to a contractor. If the initial estimate of that minimum is high and less work is required, then the contractor is still entitled to receive the money that he would have earned by doing the minimum. In other words, an owner could end up paying for more work than the contractor performs.

The third contract format is the requirements contract. This is similar to the indefinite quantities type with one significant difference. That difference is found in how the quantities are specified. The indefinite quantities contract specifies a minimum but no maximum. The requirements contract does just the opposite: it specifies a maximum but no minimum. It is not a very common contract type but has its place when the quantities required are extremely difficult to predict. This would be the case if no historical data were available or if the maintenance was to be done on new facilities. One application where it is used

successfully is in the Navy when housing is being leased in foreign countires for military families. (12) Since the standard of maintenance can vary widely, there is no way to predict how much, if any, work will be required. So a requirements contract is awarded which sets some funding aside in case it is needed. This tells the successful contractor that if any work is required, he will be paid to do it at the stated rate. The contractor is not guaranteed a minimum but knows that the work will not exceed a certain amount. This keeps him from having to beef up his work force or inventory to an unreasonable size to be able to cover any amount possible. And since the contract would not have been let in the first place if there were not at least a reasonable probability of needing some maintenance performed, he can usually count on some work being ordered.

The last of the four basic types of service contracts is the level of effort contract. This is also referred to as a time and materials contract with an initial estimate. The concept behind this format is to treat each job as a mini-change order. (12) The prospective bidders and the owner each develop independent cost estimates for the work to be performed. Then negotiations are held to determine a price agreeable to both. The contract is then treated as a fixed price lump sum contract based on those negotiations. When there are several jobs involved, as is common in maintenance, each job is negotiated individually and the total of the jobs is summed to provide the total contract

amount. This type of contract is extremely useful when there are significant budget constraints that must be considered. The format of the contract is such that the maintenance priorities can be adjusted to suit the circumstances by merely changing what work is ordered from the contractor. Since the owner has already established labor rates for several different maintenance jobs, by merely changing what jobs are actually ordered, the owner can change the total contract amount and thereby his own expenditures.

The problem with using this contract format is that the owner's estimate and the negotiations must be absolutely correct. The reason for this is that the negotiations are binding on both parties. Whatever price that is agreed on will be paid regardless of what what work is actually done. There is therefore no room for error in the written description of work on which those are based. If ever there was an opportunity for collusion between a contract negotiator and a contractor, this is it. One method used to help prevent problems of this type is to divide the various phases of contract preparation and administration between different people. This provides a system of checks and balances which helps to eliminate even the appearance of wrongdoing.

This contract type has been working in the Navy for about three years and there have been no formal complaints filed to date by the contractors. (12) Since this is a

relatively short period of time, there are those who feel that this format has not yet been fully proven. Only time and practice will tell if it will gain full acceptance and common useage.

CONTRACT TYPE DECISION

The process by which an owner decides whether or not to contract for a maintenance function and, if so, which of the four contract types is most appropriate, is one which must take into account all of the factors discussed previously. Although there is no one best method for arriving at that decision, one workable method will be presented here that can either be used as is or modified as desired to suit individual circumstances.

The decision process can be separated into three different phases which must each be handled individually. In the first phase, a decision is made whether the function should be contracted or retained in-house. There are many variables which must be taken into account, not the least of which is the cost of each alternative. It should be remembered that other factors can sometimes outweigh the apparently cheaper alternative.

If the decision is made to contract, the next phase is to decide which of the four contract types best suits the particular function being considered. Again, there are many

factors which must be accounted for. Each situation and each function is different and must be considered separately.

After the first two decisions have been made, then the detailed work starts. There are a significant number of decisions which must be made regarding the contract. These detailed decisions will often determine the relative success or failure of the contract. Ironically, these are usually the decisions left until the last minute or not consciously made at all.

When deciding whether a particular function is best contracted for or retained for performance by in-house personnel, the manager should first decide exactly what the objective should be in either case. For example, if the function is grounds maintenance, the objective is to keep the grass cut, the shrubs trimmed, the sidewalks and streets swept. One way to aid in the development of the objective is to write it down. If it is not clear enough to be put into writing, then it is probably not clear enough to be performed satisfactorily by contract. After the objective is established, start looking at the other aspects of the function in a similar fashion. Is it a one time job or is it recurring? Is it routine or subject to a lot of changes? What interaction will the people doing the job have with other departments? What resources are required? Do those resources exist in-house? Other areas of concern were discussed previously.

From the answers to all of these questions will come the decision as to the best for the particular job and circumstances. There is unfortunately no magic formula which will clearly indicate whether or not a contract should be written and advertised or not. Two companies with essentially the same job to be performed under similar circumstances may arrive at different decisions because of different goals and philosophies.

Once a decision is made to pursue contracting for the accomplishment of a function, the next area of concern is what type of contract is best suited to produce the desired end results while giving management whatever level of control and accountability it desires.

First, look again at the written description developed in the previous decision phase. How clear is it? Would someone not familiar with the organization be able to understand it completely and know exactly what is expected? This seems to be the hardest part of the process so it is worth repeating several times. In the example of the grass cutting requirement, to state that the grass must be kept cut and neat would not tell someone exactly what work is required. In order to write the statement well, it is necessary to be completely familiar with all of the work involved, the interactions, the reports, the schedules, and so on. A potential drawback is when someone is completely familiar with any job, it is easy to take a lot of the

details of the job for granted. Therefore, it is hard to step back from the job far enough to be able to explain everything in complete terms. The process of producing a clear, concise, and complete statement of work requires several reviews and rewritings to ensure that everything that management desires is included. Remember that this statement of work should consist only of what the end results should be and not how to go about getting them. In the previous example of the grounds maintenance, the grass cutting portion of a contract might read to keep the height of the grass between 1-1/2 and 3 inches, not to cut it once a week. It doesn't matter how often the grass is cut so long as the height does not exceed 3 inches or go under 1-1/2 inches. Let whoever does the work decide on the best frequency by taking into account the season of the year and other variables. Once completed, this statement essentially becomes the technical portion of the contract specifications regardless of which contract type is used.

After the technical portion of the specifications is complete, follow a similar process to determine what quantities of the different work items to be contracted will be needed. The information determined for this task should include the minimum, the maximum, and the most probable amount of work that will be needed. In many cases, all three are not determinable. This is one of the factors that will begin to lead to one or another of the contract types. The quantities can be determined by examination of historical

data, by engineering estimation, or by any other method desired. Whatever method is used the degree of confidence in the results obtained must be kept in mind. The resulting quantities of work with the accompanying confidence factors then largely determine the type of contract to be used.

If the probable amount of work to be ordered is known with a high degree of certainty, then the fixed-price lump sum contract is probably the most appropriate. If only a minimum amount can be ascertained, then either the indefinite quantities contract or level of effort contract is indicated. If only a maximum is known, then either the requirements contract or the level of effort contract is appropriate.

If the quantity data indicate either a level of effort contract or an indefinite quantities contract, then the decision will be determined by factors other than the quantities. Some of these other might factors include funds available, contract administration experience, or cost control. If this is the case, then management must review the advantages and disadvantages of each individual contract type as discussed previously. These relative strengths and weaknesses of each type of contract must then be aligned with the mangement philosophy desired. This should produce a decision as to which type is best pursued.

As mentioned before, the real work starts after the contract type decision is made. However, it is not possible

to cover the breadth of that phase of contract preparation in a paper of this scope. Therefore, only a sampling of the kind of decisions which must be made will be presented.

One of the most important questions which must be answered is what degree of management should be contracted out along with the function itself. For example, in contracting for the maintenance of a hospital, one must decide who should be responsible for the overall management of that maintenance, the contractor or the hospital. In the case of a hospital in North Carolina, it was decided to retain that type of management in-house. This was due to U. S. Navy policy in effect at the time. (10) In other circumstances it might best be contracted with the actual maintenance. One Determining factor might be the degree of control that the owner desires to maintain in the performance of the work.

In addition, to the question of management, there are several other questions which arise during this phase of the contract preparation. For example, when the contractor is required to interact with other departments or personnel, who should be the point of contact? Or should all communications with the contractor be handled through one office? What reports are required of the contractor and who should receive them? What reports will the contractor need from other sources and who should provide them? If an emergency situation arises, who is authorized to either

order work or direct the contractor's personnel if need be? What in-house resources such as tools, equipment, office space, etc., will be provided for the contractor's use? Who provides and pays for utilities that the contractor will use in the performance of the contract? What records will the contractor be required to keep? And the list of possible questions goes on. It should be obvious by this point that this phase of the contracting process is best placed in the hands of a contract specialist who is familiar with the degree of detail required to ensure compliance with the desires and objectives of management. This leaves management free to make the decisions necessary and to provide the general guidance required without becoming unnecessarily burdened with minute details. It also goes without saying that management should not merely leave this work for the contract specialists, but should work closely with them. It seems, however, in administering contracts of any type, that it is precisely these types of details that have been forgotten that cause the most problems. It is easy to forget about the requirement to keep historical data until the boss asks for some report that requires those kinds of data. Then it seems that the contractor can reconstruct them, but at a premium price. And this is as it should be since it was not specified in the original contract and is therefore a new requirement which is being placed on the contractor.

The last category of questions which must be answered centers around what measures will be used to determine contract performance. This involves three separate steps.

a) First determine what aspects of contract performance are measurable. Certainly not all will be, and not all of those that are measurable are of enough concern for management to bother with. Establish a good listing that will provide management with sufficient information to keep track of both the function and the contractor's performance.
b) Determine how to go about measuring those items listed in step (a). Should the contractor keep records and submit them on a regular basis? Should management perform regular inspections or random inspections?
c) What levels of performance will be indicated by what type of results? What penalties or incentives will be provided if the contractor either exceeds or fails to meet the required levels of performance?

As can be seen from the number of questions listed in the three steps, this phase of the decision process is crucial to the successful execution of a maintenance service contract. Without careful consideration being given to all of these aspects of the contract, there is little chance that the contract will be successfully carried out regardless of how professional a contractor attempts to be.

EXAMPLE

Appendix 2 contains a contract specification which was drafted for the public works function at the Naval Hospital, Camp Lejeune, N.C. (10) It has since been superseded by some new regulatory requirements but it serves as a useful example of the principles discussed.

The hospital that the specification was prepared for was located on the Marine Corps Base at Camp Lejeune. The primary function of the facility was to serve the active duty members of the Second Marine Division and other units stationed there. The specification covered a 420,000-square-foot inpatient and outpatient facility, 50 acres of grounds surrounding the hospital, and several minor outbuildings on the grounds. The hospital facility provided routine outpatient treatment in about 15 clinics (within the main building), emergency services, 8 operating suites, an intensive care unit, a coronary care unit, and approximately 120 inpatient beds. The contract called for the operation and maintenance of the entire facility as well as all non-medical equipment. The term non-medical meant all of the furniture, office equipment, and other equipment that was not directly used in patient care. The contract also called for continuous operation of a boiler plant, chillers, and testing and possible operation of emergency power generation equipment capable of providing power to the entire facility. It also included the maintenance of a fleet of 40 hospital

vehicles ranging from 3-wheel Cushman scooters to dump trucks to sophisticated emergency vehicles. So the scope of the contract was fairly broad and included many different aspects of facilities management.

Complicating the preparation of the specification was the fact that the facility was new. In fact, when the preparation of the specification was begun, the facility was not completed and the entire inventory of equipment was not yet known.

Excerpts of the contract specification have been included for illustration but the portion which is of most concern is section 00005, the technical specifications. This section consists of the performance statement discussed earlier. It is a detailed listing of what end results are desired from the contractor. For example, section 00005, division 2, paragraph 2.2.1.3 describes to what extent all gutters, downspouts, and splash blocks are to be maintained. It states that they

> "shall be maintained to function as originally designed to effectively channel runoff water away from the unit. Gutters and downspouts shall be maintained properly aligned and secured with splash blocks correctly positioned to receive the impact of the drainage water. Gutters and downspouts shall be kept free of debris or any obstruction."

At this point it might be helpful to follow through an example of how this contract specification was developed. To do this, the earlier example of grounds maintenance will be used. The grounds at the hospital consist of about 50 acres that required maintenance to three different degrees. These three areas are:

1): Forested areas along the fringe of the grounds where only debris removal is required.

2): The majority of the grassy areas surrounding the hospital which require regular mowing but no additional grooming.

3): Those areas which are bounded by the sidewalks and outside eating areas that required close cutting as well as edging and trimming.

In addition each area required some amount of care with regards to fertilizing, leaf raking, erosion control and the like. All of these are also classed by area.

For the moment assume that the grounds maintenance was a stand-alone function which management was considering contracting. The first decision phase to be considered is whether or not to contract for this function. In this particular instance the decision has been mandated by an external factor, OMB Circular A76. (4) This simply states that the federal government is not to compete with civilian firms. In practice, it means that a cost comparison must be done to ensure that the functions which are retained by the

federal government cannot be done more cost effectively by contract. To discover which is the least expensive, it is necessary to prepare the contract and advertise it with the government's historical cost being treated as a contractor's bid. If the government is the low bidder, then the work stays in-house. If a contractor is the low bidder, then the work goes contract and the government no longer performs that particular function.

After deciding that the work must at least be advertised, the technical portion of the specifications is prepared as discussed. Whether the function ultimately stays in-house or goes contract makes no difference in this preparation. After this is completed, the quantities which will be required are examined. For grounds maintenance it is a relatively simple matter to compute the acreage requiring each different level of care and how often each must be performed. Since this represents the most likely amount of work that will be ordered, this tends to lead toward the fixed price format. The performance of a contractor would also be easy to measure and there are no extraordinary requirements for control or other special circumstances that would warrant using a different format so the fixed price format should be chosen.

So the most appropriate type of contract to use in the case of this example is the fixed price lump sum contract. It provides for the least amount of risk to the owner and

has no significant drawbacks that would surface in this case.

Then begins the long and tedious process of writing the rest of the contract. This will not be elaborated on any further at this point as it has been covered elsewhere.

Similar examples for each of the other three contract types can also be drawn from Appendix 2. Since the process is the same, this would tend to be redundant and is therefore not done herein. The one example given illustrates all of the principles presented in this paper.

Reviewing this example in the light of the previous discussion illustrates how the contract decision process should be followed. First the objective of the work must be established and written. Then the desires of management must be considered. This will determine if there are any special considerations which will affect the writing or administration of the contract. Then the quantity of work to be ordered must be estimated. Then the contract specification itself is prepared.

CONCLUSIONS

It has been the intent of this paper to synthesize information available from a variety of sources in an attempt to present a basic discussion of service contracting as it applies to facilities maintenance. In doing this it was necessary to broaden the discussion to generalities in order to make it useful. To cover all of the details of the information discussed would require several volumes.

It is hoped that managers who have a need to understand the contracting process and the factors involved in making an intelligent decision regarding this type of contracting will gain a general understanding of the subject matter. The driving force behind this paper was the apparent lack of any one source where this information was presented. In talking with various people about possible sources of information about this subject, the usual response was that the way to learn about contracts was to get into the contracts field. This, however, is not always a viable alternative. In many cases a certain amount of knowledge is required to determine whether or not it is desirable to even pursue a subject or field. This paper should provide that level of knowledge.

A second purpose for this paper is to present an overview of maintenance service contracts. Often those who work in one or another aspect of contracting lose sight of what the rest of the field is about. By being able to understand and visualize the overall process those people

should be better able to appreciate how their efforts contribute. By all levels of the organization understanding the overall process involved, the organization itself will be better able to realize its goals.

References

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6. Facilities Support Contracting Specification Workbook, (Prepared in conjunction with the student guide for Facilities Support Contract, Reference 3).
7. Commander, Naval Facilities Engineering Command Memorandum, dated 23 Aug 1984
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9. "Politics and Contracting-Out", by John F. Judge, Government Executive, June, 1982, p. 46.

10. Contract for Public Works Services at Naval Regional Medical Center, Camp Lejeune, N. C., prepared by G. R. Long, Lt, CEC, USN, 1984.

Unpublished interviews with:

11. Monica Shephard, Professional Engineer, Civil Engineer, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia, February, 1985.

12. Dick Klusman, Professional Engineer, Civil Engineer, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia, February, 1985.

13. Elwood Morris, Engineering Technician, Naval Hospital, Camp Lejeune, North Carolina, May, 1985.

PROGRAM	AUTHORITY	PURPOSE
Buy American Act (1933)	41 U.S.C. 10a-10d	To provide preference for domestic materials over foreign materials.
Preference for United States Food, Clothing, and Fibers (Berry Amendment)	Public law 91-171, sect. 624	To restrict the Department of Defense from purchasing specified classes of commodities of foreign origin.
Prefence for United States Manufacturers	16 U.S.C. 560a	To restrict U.S. Forest Service from purchasing twine manufactured from materials of foreign origin.
Labor Surplus Area Concerns (1952)	Defense Manpower Policy No. 4, 32A CFR 33 (Supp. 1972)	To provide preference to concerns performing in areas of unemployment or underemployment.
Required source for Jewel Bearings	DAR 7-104.37 FAR 52-208-1	To preserve a mobilization base for the manufacture of jewel bearings.
Prohibition of Construction of Naval Vessels in Foreign Shipyards	Public Law 91-171 (DOD Appropriation Act of 1970), title IV	To prohibit use of appropriated funds for the construction of any Navy vessel in foreign shipyards.
Acquisition of foreign Buses	Public Law 90-500, (DOD Appropriation Act of 1969), sect. 404	To restrict use of appropriated funds to purchase, lease, rent, or otherwise acquire foreign manufactureed buses.
Preference for United States Manufacturers	22 U.S.C. 295a	To provide preference for domestic manufacturers in construction of diplomatic and consular establishments.
reference for United tates Products (Military ssistance Programs)	22 U.S.C. 2354(a)	To require the purchase of U.S. end products for the military assistance programs.

International Balance of Payment	DAR 6-800, FPR 1-6.8 FAR 25.3	To limit purchase of foreign end products and services for use abroad.
Preference to U.S. Vessels	10 U.S.C. 2631 46 U.S.C. 1241	To require the shipment of all military and at least half of other goods in U.S. vessels.
Purchases in Communist Areas	DAR 6-401 et seq. FAR 25.7	To prohibit acquistion of supplies from sources within Communist areas.
Purchase under the Trade Agreement Act of 1979	FAR 25.4	Exempts designated countries from the restrictions of the "Buy American Act" and "Balance of Payments Program" for designated eligible products valued at $169,000 or more.
Use of Excess and Near Excess Currency	DAR 6-1109 FPR 1-6.804-806 FAR 25.304	To provide preference in award to bidders willing to be paid in excess or near excess foreign currency.
Small Business Act	15 U.S.C. 631-647; see also 41 U.S.C. 252(b) and 10 U.S.C. 2301	To place fair portion of Government purchases and contracts with small business concerns.
Prison-made supplies	18 U.S.C. 4124	To require mandatory purchase of specific supplies from Federal Prison Industries, etc.
Javitts-Wagner, O'Day Act	41 U.S.C. 46-48	To make mandatory purchase of products made by blind and other handicapped persons. (NIB/NISH Workshops)
rohibition of Price Differential	Public Law 83-179, sect. 644	To prohibit use of appropriated funds for payment of price differential on contracts made to relieve economic dislocation.

Equal Employment Opportunity (1965)	Exec. Order 11246 Exec. Order 11375	To prohibit discrimination in Government contracting.
Employment Openings for Veterans	Exec. Order 11598 41 CFR 60-250, FAR 12.1301	To require contractors to list suitable employment openings with State employment system to assist veterans in obtaining jobs.
Vietnam Veterans Readjustment Act	Public Law 92-540 38 U.S.C. 2012 DOD-FAR Supplement 22.13	To give employment preference to disabled veterans and veterans of the Vietnam era.
Convict Labor Act (1905)	Exec Order 325A, DAR 12-201 et seq. FAR 22.2 et seq.	To prohibit employment on Government contracts of persons imprisoned at hard labor.
Walsh-Healey Public Contracts Act (1936)	41 U.S.C. 35-45	To prescribe minimum wage, hours, age, and working conditions for supply contracts.
Davis-Bacon Act (1931)	40 U.S.C. 276a-1-5	To prescribe minimum wages, fringe benefits, and working conditions on construction contracts in excess of $2,000.
Service Contract Act of 1965	41 U.S.C. 351-357	To prescribe wages, fringe benefits, and working conditions for service contracts in excess of $2,500.
Contract Work Hours & Safety Standards Act	40 U.S.C. 328-332	To prescribe eight-hour day, forty-hour week, and health and safety standards for laborers and mechanics on public works.
Fair Labor Standards ct of 1938	29 U.S.C. 201-219	To establish minimum wage and maximum hours standards for employees engaged in commerce or the production of goods for commerce.

Officials Not to Benefit	41 U.S.C. 22	To prohibit members of Congress from benefiting from any Government contract.
Copeland "Anti-Kickback" Act (1934)	18 U.S.C. 874 40 U.S.C. 276c	To prohibit kickbacks from employees on public works.
Covenant Against Contingent Fees.	41 CFR 1-1.500-509	To void contract obtained by broker for a contingent fee.
Gratuities	32 CFR 7.104-16	To provide Government with right to terminate if gratuity is given to a Government employee to obtain contract of favorable treatment.
Clean Air Act of 1970	42 U.S.C. 1857h-4	To prohibit contracting with a company convicted of criminal violation of air pollution standards.
Release of Product Information to Consumers	Exec. Order 11566	To encourage dissemination of Government documents containing product information of possible use to consumers.
Care of Laboratory Animals	DAR 7-303.44 DOD-FAR Supplement 52.235-7003	To require humane treatment in use of experimental or laboratory animals.
Humane Slaughter Act	7 U.S.C. 1901-1906	To purchase meat only from suppliers who conform to humane slaughter standards.
Miller Act (1935)	7 U.S.C. 270a-d	To require contractor to provide payment and performance bonds on Government construction contracts.
Economic Stabilization Act of 1970	12 U.S.C. 1904 note	To stabilize prices, rents, wages, salaries,

		dividends, and interest.
Truth in Negotiation Act of 1962	10 U.S.C. 2306(f)	To require contractors to certify and have audit proposals for negotiated procurements in excess of $500,000.
Wunderlich Act of 1954	41 U.S.C. 321	To make CO final decision "Appealable".
Brooks Act of 1972	40 U.S.C. 541	To permit negotiation of A-E contracts.
Contract Disputes Act of 1973	41 U.S.C. 601	To detail remedies of contractors and the Government before boards and in the courts.
Equal Access to Justice Act of 1980	5 U.S.C. 504	To allow recovery of attorneys' fees by Plaintiffs/Defendants if Government position not substantially justified.
Prompt Payment Act of 1982	Public Law 97-177	To require payment of interest by the Government after 30 days of receipt of a proper invoice.
Improvement of Small Business Access to Federal Procurement Information Act	Public Law 98-72	To improve small business access to federal procurement information. Requires publication of synopsis in Commerce Business Daily 15 days prior to issuance of a solicitation and a minimum of 30 days between issuance of solicitation and bid opening.

BIDDING INFORMATION

1. GENERAL INTENTION: It is the declared and acknowledged intention and meaning to obtain Public Works Service at the Naval Regional Medical Center, Camp Lejeune, North Carolina, in accordance with the standards contained herein, (By means of a combination lump sum and indefinite quantities contract.) Public Works Services includes the operation, maintenance, repair and alteration of facilities, utilities, grounds, transportation, and equipment, including supporting administrative requirements. Naval Regional Medical Center, Camp Lejeune, N. C. is a brand new sophisticated medical complex. The Contractor will be required to establish procedures for this new facility. The quality, responsiveness, and reliability of services directly impact on the ability of NRMC to deliver health care. Compliance with the intent of this contract will require a highly-skilled, flexible work force directed by an experienced, resourceful management team. The Contractor must manage his work force to accommodate: (1) medical functions and schedules, (2) safety, infection, and hazardous material control measures, (3) the specialized requirements of sophisticated utilities systems in conjunction with a computerized Energy Monitoring and Control System (EMCS) which directly support life support as well as other critical medical care and administrative functions, and (4) Command decisions which may shift priorities to support clinical and administrative requirements.

2. GENERAL DESCRIPTION: The Contractor shall furnish all labor, material, equipment, transportation, facilities, including supervision, administration, and management, unless otherwise specified herein, as required to provide a broad scope of public works functions for a brand new sophisticated medical complex involved directly in patient care and general support functions. Public Works Services include: service work, preventive maintenance, specific maintenance and recurring repair and alterations of facilities, utilities, and non-medical equipment; maintenance, repair, and care of roads and grounds; pest control services; maintenance and repair of Civil Engineering Support Equipment (CESE); continuous operation of boilers, chillers. Specific facilities, systems, and technical requirements are listed, defined, and discussed in the Technical Specification, Section 00005. Major repairs or alterations to buildings, structures, and utility systems are specifically excluded. A major repair or alteration is defined as a one-time repair or alteration with an estimated cost for labor and material of $10,000 or more.

3. LOCATION: The location of work shall be the Naval Regional Medical Center, Camp Lejeune, N.C. The exact location(s) will be as described in this specificatioin or as directed by the Officer in Charge (OIC).

4. DISCOUNTS: Prompt payment discounts will not be considered in evaluation of bids. However, any offered discount will form a part of the award and will be taken if payment is made within the discount period indicated in bid by the bidder. As an alternative to bidding, a prompt payment discount in conjunction with the bid, bidders awarded contracts may include prompt payment discount on individual invoices.

17. CONTRACT TYPE: This is a COMBINATION "Fixed-price lump sum" and "indefinite quantity" contract.

a. Fixed-Price Lump Sum Portion: The fixed price lump sum portion of the contract consists fo the work specified in Divisions 1 through 12 of Section 00005.

b. Indefinite Quantity Portion: The indefinite quantity portion of the contract is based on a level of effort and will be ordered when needed by the Government. The Government makes no representation as to the actual amount of work which will be requested. The total amount of work to be ordered during any contract period shall not exceed 200% of the indefinite quantity bid item for that period. Estimate shall be based on NAVFAC EPS estimates. Time estimates shall not include any time for transportation of personnel or material.

18. ITEMS OF BID:

a. Bids shall be submitted in duplicate on NAVFAC Form 4330/24, "Invitation, Bid, and Award," Dec 1973 Ed., and shall be accompanied by NAVFAC Form 4330/39, June 1972 Ed., "Representations and Certifications." DO NOT SUBMIT A COMPLETED SCHEDULE OF DEDUCTIONS WITH BIDS.

Bid Item 1: Price for the performance of work complete in accordance with the specifications for all items listed in the Schedule of Deductions, hereafter referred to as the fixed-price lump sum portion of the contract.

a. Price for the Base Year $____________________

b. Price for the First Option Year $____________________

c. Price for the Second Option Year $____________________

Bid Item 2: Price for the performance of work, complete in accordance with the specifications, for all the items listed in the Schedule of Indefinite Quantity Work shown below, hereafter referred to as the indefinite quantities portion of the contract. The price for bid item 2 should be obtained by entering the proposed composite labor rates and material handling charge, as appropriate, multiplying by the estimated quantity and entering the mathematical extension in the item total column. The price for bid item 2 is the total of the indefinite quantity work item totals.

a. Price for the Base Year $____________________

b. Price for the First Option Year $____________________

c. Price for the Second Option Year $____________________

SCHEDULE OF INDEFINITE QUANTITY WORK

ITEMS OF WORK FOR BASE YEAR	ESTIMATED QUANTITY	COMPOSITE LABOR RATE	ITEM TOTAL
1.a. Labor to perform specific work subject to the service contract wage determination.	10,000 manhours	$_______	$_______
b. Materials required to perform work identified in 1.a. above. $\$25{,}000 \times \left(1 + \frac{\%\text{ material handling}}{100}\right) =$			$_______
TOTAL FOR ITEM A 1			$_______
2.a. Labor to perform specific work subject to the Davis-Bacon wage determination.	2,000 manhours	$_______	$_______
b. Materials required to perform work identified in 2.a. above. $\$75{,}000 \times \left(1 + \frac{\%\text{ material handling}}{100}\right) =$			$_______
TOTAL FOR ITEM A 2			$_______

ITEMS OF WORK FIRST OPTION YEAR	ESTIMATED QUANTITY	COMPOSITE LABOR RATES	ITEM TOTAL
1.a. Labor to perform specific work subject to the service contract wage determination.	10,000 manhours	$_______	$_______
b. Materials required to perform work identified in 1.a. above. $\$25{,}000 \times \left(1 + \frac{\%\text{ material handling}}{100}\right) =$			$_______
TOTAL FOR ITEM B 1			$_______

2.a. Labor to perform specific work subject to the Davis-Bacon wage determination.	2,000 manhours	$________	$________
b. Materials required to perform work identified in 2.a. above. $\$75{,}000 \times \left(1 + \frac{\%\ \text{material handling}}{100}\right) =$			$________
TOTAL FOR ITEM B 2			$________

ITEMS OF WORK SECOND OPTION YEAR	ESTIMATED QUANTITY	COMPOSITE LABOR RATES	ITEM TOTAL
1.a. Labor to perform specific work subject to the service contract wage determination.	10,000 manhours	$________	$________
b. Materials required to perform work identified in 1.a. above. $\$25{,}000 \times \left(1 + \frac{\%\ \text{material handling}}{100}\right) =$			$________
TOTAL FOR ITEM C 1			$________
2.a. Labor to perform specific work subject to the Davis-Bacon wage determination.	2,000 manhours	$________	$________
b. Materials required to perform work identified in 2.a. above. $\$75{,}000 \times \left(1 + \frac{\%\ \text{material handling}}{100}\right) =$			$________
TOTAL FOR ITEM C 2			$________

b. COMPOSITE LABOR RATE: Composite labor rates must include all direct and indirect labor, supervision, overhead, profit, equipment, and transportation costs for personnel or equipment.

19. SCHEDULE OF DEDUCTIONS: The successful Contractor shall within 15 days of Contract award prepare and submit an acceptable Schedule of Deductions for the base year, the first option year, and the second option year of the contract. No work may commence until a Schedule of Deductions is approved. The Total of the Schedule of Deductions must equal the contract amount. Prices shown in the Schedule of Deductions will be utilized in conjunction with the "Consequences of Contractor's Failure to Perform" clause, Section 00004, in making deductions for non-performance or unsatisfactory performance. The Schedule of Deductions also provides fixed unit labor costs for specific alteration work, and associated pre-priced amounts for direct material. Unbalancing of costs in the Schedule of Deductions shall be cause for requiring resubmission of a balanced schedule, and may be grounds for termination for default. The Government also reserves the right to

unilaterally establish a Schedule of Deductions in the event that the Contractor presents an unbalanced or materially deficient schedule. The approved Schedule of Deductions shall be a part of this contract. DO NOT SUBMIT SCHEDULE OF DEDUCTIONS WITH BID. The format of the schedule of deductions is as follows:

SCHEDULE OF DEDUCTIONS

	UNITS	NO. OF UNITS	UNIT PRICE	SUBTOTAL
ADMINISTRATION, DIVISION 1				
1. Planning and Estimating	Month	12	$______	$______
2. Job Order Accounting/ Reporting	Month	12	$______	$______
TOTAL ADMINISTRATION				$______
BUILDINGS AND STRUCTURES MAINTENANCE, DIVISION 2				
1. Fire Alarm Maintenance	Month	12	$______	$______
2. Automatic Door Maintenance	Month	12	$______	$______
3. Line Isolation Monitor Maintenance	Month	12	$______	$______
TOTAL BUILDING AND STRUCTURES MAINTENANCE				$______
UTILITY OPERATIONS AND MAINTENANCE DIVISION 3				
1. Steam Plant Operations	Month	12	$______	$______
2. Maintenance	Month	12	$______	$______
3. Annual Overhaul	Each	1	$______	$______
TOTAL UTILITY OPERATION AND MAINTENANCE				$______
MISCELLANEOUS WORK, DIVISION 4				
1. Total Miscellaneous Work	Month	12	$______	$______
CONTRACT OPERATORS, DIVISION 5				
1. Total Contract Operators	Month	12	$______	$______
ELECTRONIC SYSTEMS MAINTENANCE DIVISION 6				
1. Total Electronic Systems Maintenance	Month	12	$______	$______

GROUNDS AND GROUNDS STRUCTURES MAINTENANCE, DIVISION 8				
1. Grounds Maintenance				
a. Enhanced Level - April through October	Month	7	$______	$______
November through March	Month	5	$______	$______
b. Normal Level - April through October	Month	7	$______	$______
November through March	Month	5	$______	$______
c. Minimal Level - April through October	Month	7	$______	$______
November through March	Month	5	$______	$______
2. Snow and Ice Removal	Month	6	$______	$______
TOTAL GROUNDS MAINTENANCE				$______
PEST CONTROL, DIVISION 9				
1. Pest Control Service	Month	12	$______	$______
MAINTENANCE OF CESE, DIVISION 10				
1. Preventive Maintenance and Inspection	Month	12	$______	$______
2. CESE Maintenance	Month	12	$______	$______
TOTAL MAINTENANCE SERVICES				$______
SERVICE WORK, DIVISION 12				
1. Work Reception	Month	12	$______	$______
2. Continuous Inspection	Month	12	$______	$______
3. Service Work	Month	12	$______	$______
TOTAL SERVICE WORK				$______
	GRAND TOTAL			$______

20. PRE-AWARD SURVEY: The Government will make a rigorous pre-aware survey of the apparent low bidder to determine whether or not such bidder is

PUBLIC WORKS SERVICE

SECTION 00005 TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

DIVISION 1..................................Administration
DIVISION 2..................................Buildings and Structures Maintenance
DIVISION 3..................................Utility Operation and Maintenance
DIVISION 4..................................Miscellaneous Work
DIVISION 5..................................Contract Operations
DIVISION 6..................................Electronics Systems Maintenance
DIVISION 7..................................Preventive Maintenance
DIVISION 8..................................Ground and Ground Structures Maintenance
DIVISION 9..................................Pest Control
DIVISION 10..................................Maintenance or CESE
DIVISION 11..................................Deleted
DIVISION 12..................................Service Work
DIVISION 13..................................Painting

DIVISION 1

ADMINISTRATION
(PERFORMANCE SPECIFICATION)

1.1. General: The Contractor shall be responsible for establishing a job order accounting and reporting system; and performing job planning and estimating.

1.2. Planning and Estimating: The Contractor shall prepare preliminary cost estimates (scoping estimates) for deficiencies which are beyond the Contractor's responsibility under the lump sum bid. These deficiencies are generated as a result of the Contractor's continuous inspections or from customer complaints. The accuracy of the scoping estimates shall be within plus or minus 25% of the actual cost of the work. The scoping estimates shall be forwarded to the OIC for review.

1.3. Material Costs: The Contractor shall procure material for specific work from Government authorized sources. The list of Government authorized sources shall be available for review during the pre-bid conference. For individual items of material estimated to exceed $500, the Contractor shall obtain written competitive quotes from at least three sources. The quotes will be forwarded to the OIC for review and approval. With the OIC's concurrence, the Contractor will procure the material item from the low bidder. The Contractor shall be allowed to apply a material handling surcharge as bid in the contract, to recover the overhead costs associated with obtaining the material. Any discounts offered by the low bidder shall be passed on to the Government.

1.4. Job Order Accounting and Reporting: The work done by the Contractor will be accomplished under a number of categories. It will be necessary for the Contractor to establish a job order numbering system or to use the system already in place, at the contractors option. Any deviation from the Government system shall be submitted to the OIC for approval within forty (40) days of contract award.

DIVISION 2

BUILDINGS AND STRUCTURES MAINTENANCE
(PERFORMANCE SPECIFICATION)

2.1. General: The Contractor shall be responsible for performing maintenance of buildings and structures.

2.2. Maintenance Level: The level of maintenance shall assure that all buildings and structures are free of missing components or defects which would affect the safety, pleasing appearance or habitability of the buildings and structures or would prevent any electrical, mechanical, plumbing or structural system from functioning in accordance with the design intent. Corrected work shall be carried to completion, including touch-up painting and/or operational checks. The quality of the work and the repaired areas shall be fully compatible with adjacent surface or equipment. All replacements shall match existing in dimensions, materials, quality of work, finish, color and design.

2.2.1. Exterior:

2.2.1.1. Exterior Walls: An exterior wall is any wall that is exposed to the weather. All exterior walls shall be maintained in a structurally sound, weathertight condition and in a good state of repair. The wall shall be free of noticeable pitting and corrosion, vegetation and animal life, deteriorated siding and trim, discoloration and graffiti or other defects which would render an unsightly appearance to the exterior walls. Structural repairs shall restore elements/members/systems to their design strength.

2.2.1.2. Roofing: All roofing, flashing and gravel stops shall be maintained in such a manner as to preserve a weathertight seal and prevent corrosion and abnormal deterioration of individual components. Missing pieces shall be replaced to retain the original whole condition of the roof system.

2.2.1.3. All Gutters, Downspouts and Splash Blocks: Shall be maintained to function as originally designed to effectively channel runoff water away from the unit. Gutters and downspouts shall be maintained properly aligned and secured to the with splash blocks correctly positioned to receive the impact of the drainage water. Gutters and downspouts shall be kept free of debris or any obstruction.

2.2.1.4. Overhangs: Overhangs will be maintained in a good state of repair with fascias and soffets properly secured. Bird screens and vents shall be maintained intact and free of corrosion.

2.2.1.5. Windows, Doors, Screens, and Shutters: Windows, doors, screens and shutters will be maintained to operate smoothly and properly without binding, sticking, or other defects which would prevent their functioning

in accordance with the design intent. Exterior doors, windows, and shutters shall be maintained in a manner that preserves the weathertight seal with caulking, glazing, and weatherstripping fully intact. New glass used for replacement shall be the same thickness, type and quality as the existing glass. Windows, screens, and screen doors shall be maintained in good working order, free of torn fabric and frame defects to assure the screening function is effective. All hardware such as hinges, locks, strike plates, window operator mechanisms, door closers, springs, etc., shall be maintained free of corrosion or other defects that would prevent its operating as intended.

2.2.1.6. Miscellaneous Roof Structures: Chimneys, vent stacks, roof ventilators or other items that pierce the roof shall be maintained to function as originally designed. All metal surfaces shall be maintained free of noticeable pitting and corrosion.

2.2.2. Interior:

2.2.2.1. Interior Walls: Interior wall systems shall be maintained in a good state of repair, free of damage, deterioration, cracks or defective materials. The aesthetic appearance shall be free of noticeable discoloration or other defects which would render an unsightly appearance to the interior walls.

2.2.2.2. Floors and Floor Coverings:

2.2.2.2.1. Concrete and Brick floors: Concrete and brick floors shall be maintained usable, safe and with a pleasing appearance, free of cracked, spalled or broken areas or cracks which adversely affect the structural integrity of the floor.

2.2.2.2.2. Subflooring: Subflooring and structural members shall be maintained in a safe and usable manner. Deteriorated subflooring members shall be repaired or replaced to retain the original whole condition of the floor.

2.2.2.2.3. Hardwood Flooring: All hardwood floors shall be maintained in an acceptable state of repair with a smooth, glossy finish, free of damage, deterioration, or buckling. All dust generated by floor finishing shall be removed from the quarters.

2.2.2.2.4. Floor Coverings: All linoleum and/or resilient tile floor covering shall be maintained free of cracks, chips, and torn or excessively worn material to provide floor coverings that are usable and have a pleasing appearance.

2.2.2.2.5. Tile: All tile floors shall be maintained free of loose, damaged, broken, missing or cracked tiles and with joints properly sealed to provide the intended water tight surface.

2.2.2.3. Stairways: Stairway metal/wood treads, risers, mosings, balustrades, handrails and/or structural members shall be maintained in a good state of repair to provide a safe and usable system.

2.2.2.4. Ceilings: All ceilings and framing members shall be maintained, properly secured and in a good state of repair. The ceiling shall be free of holes or cracks. Badly soiled, defaced or water damaged surfaces or other defects which render an unsightly appearance to the ceiling are to be repaired to restore surfaces to a good condition.

2.2.2.5. Venetian Blinds and Shades: All venetian blinds and shades shall be maintained to operate smoothly and properly, and kept free of damaged slats, deteriorated tapes, cords, hardware, or rails, or torn fabric.

2.2.2.6. Interior Trim: All interior trim shall be preserved in a good state of repair, free of unsightly appearances. Surfaces shall be maintained smooth, free of chipped or peeling paint, exposed nails, warps, cracks, rot, or termite damage.

2.2.2.7. Built-In Cabinetry: Cabinets, shelving, countertops and similar equipment shall be maintained in a fully usable condition with a pleasing appearance. Missing or inoperative hardware shall be replaced. The countertops shall be free of warped, marred, burned or damaged areas. Repaired/replaced cabinets shall be restored to original arrangement and/or finished to original condition.

2.2.2.8. Keys and Locks: The contractor shall provide a key making machine and maintain a stock of key blanks for all facilities. The Contractor shall maintain the blanks in an orderly arrangement. If the Contractor loses any keys, the Contractor is responsible for changing out or retumbling all locks in that unit and must provide the appropriate keys at no additional cost to the Government. In the event a master key in the Contractor's possession is lost or duplicated, all keys and locks for that system will be replaced or retumbled at no additional cost to the Government. Locks should be maintained so as to be free of all defects and to operate in a satisfactory manner. All new locks installed shall fit the existing master key system and be keyed to fit the existing key for the lock it replaces.

2.2.2.9. Doors shall be maintained to operate smoothly and properly without binding, sticking, or other defects which would prevent their functioning as designed. Special attention is called to the standards of NFPA 101 regarding various types of doors in hospitals. This code shall be strictly adhered to.

2.2.2.10. Accessories: Accessories such as: doorstops, paper holders, soap trays, towel bars, shower curtain rods, toilet seats, medicine cabinets, venetian blind brackets, curtain rods, closet pulley guides, building numbers, vents, etc., shall be maintained free of defects and in a satisfactorily functioning condition.

2.2.2.11. Electrical: The Contractor shall be responsible for all preventive maintenance of the interior electrical equipment and distribution system within the building, beginning with the weatherhead. The electrical equipment, distribution panel, connections, grounds, outlets, switches, wiring and lighting fixtures shall be maintained in a

safe, operational, and usable condition. Cracked or broken receptacles and switch face plates shall be replaced with new plates of the same color. Light fixture lenses and globes shall be maintained with a pleasing appearance. Receptacles and breakers with groundfault sensors shall be capable of properly detecting faults. Maintenance of Government owned items such as lamps, appliances and cords is also the responsibility of the contractor. Workmanship and materials shall conform to the National Fire Protection Association 70: National Electrical Code.

2.2.2.12. Plumbing: All plumbing systems and fixtures shall be maintained in a good and safe operating condition and free of leaks and drips. Domestic water lines shall be maintained from and including the service cut-off box. Waste and sewage lines shall be maintained to the connection at the sanitary sewer main. Gas lines shall be maintained up to and including the tanks. Workmanship and materials shall conform to the American National Standards Institute A40.8-55 National Plumbing Code.

2.2.2.12.1. Plumbing Fixtures: All sinks, tubs, toilets, basins, lavatories, showers, etc., shall be maintained to operate properly, drain freely and be free of chips, cracks or excessive discoloration. All fixtures that cannot be repaired shall be replaced with plumbing fixtures that are in strict compliance with the provisions of Department of Defense specification 4270.21. All replacement water closets shall be water saver type that use approximately 3-1/2 gallons per flush. Defective shower heads shall be replaced with a water saver shower head.

2.3. Other Work: Within 40 days after contract award, the Contractor shall submit a written plan to be approved by the OIC indicating the methods and frequencies of accomplishing the following work:

2.3.1. Fire Alarm System: The Contractor shall perform inspections, preventive maintenance, and repairs of the following portions of the fire alarm system:

a. Smoke Door Closers
b. Sprinkler System Flow Switches
c. Pre-action & Dry Pipe System Controls
d. Valve Supervisory Devices
e. Fire Pumps and Associated Equipment
f. Kitchens Hood Equipment

All other portions of the fire alarm system will be maintained under a separate contract.

2.3.2. Automatic Doors: The automatic doors include electric motors, gear boxes, sprockets, hydraulic pumps and cylinders, electrical control devices, belts, cables, glass frames, chains, springs, and auxiliary equipment. Doors shall be inspected and adjusted in accordance with manfacturer's recommendations. Automatic doors in high traffic areas may require additional maintenance. Maintenance to be done during the inspection includes lubrication, adjusting interior travel and sensitivity, and checking weatherstripping.

2.3.3. Line Isolation Monitors: All monitors must be checked and tested in accordance with JCAH standards. Annually, the system must be tested by applying a variable current to ground through the test equipment or other approved method. If a monitor is defective, the Contractor shall either repair or replace the unit at no additional cost to the Government.

DIVISION 3

UTILITY OPERATION AND MAINTENANCE
(PERFORMANCE SPECIFICATION)

3.1. General Requirements: The Contractor shall operate, maintain, and manage the utility systems as specified herein. In general, the work shall include the identification, classification, planning, scheduling, status reporting, and analysis of utility system operations and maintenance. The Contractor shall perform operation, operator inspection and maintenance, and preventive maintenance for all utility systems including boilers, chillers, air conditioning, water, sewer, fuel systems, electrical distribution, air compressors, emergency power generation, and miscellaneous pumps. The utility system consists of the following categories:

a. Steam
b. Water
c. Sewage
d. Medical Vacuum
e. Medical Oxygen
f. Nitrous Oxide
g. Compressed Air (Building & Medical)
h. Electrical
i. Heating, Ventilating & Air Conditioning

Utility system operation and maintenance is critical to Hospital operation. A high degree of surveillance and preventive maintenance is required of the Contractor. The Contractor shall prepare special emergency procedures. Operation and maintenance shall be in accordance with Joint Commission on Accreditation of Hospitals (JCAH) standards.

3.2. Spare Parts Inventory: The Contractor shall establish and maintain an inventory of spare parts for utility system maintenance. The inventory shall contain sufficient equipment and parts that critical systems remain fully operational at all times.

3.3. Steam Plant Operation: The Contractor shall operate a central steam plant consisting of 2 - 11,716,000 BTU/HR 125 PSIG boilers and associated equipment. Operation requirements shall apply to the boilers, pumps, controls, water treatment, fuel handling and treatment, and associated equipment. Operation of the steam plant and components shall follow the requirements of the current Standard Operating Procedures (SOP). The Standard Operating Procedure will be given to the Contractor upon contract award.

3.3.1. Staffing: The Contractor shall provide sufficiently trained, qualified personnel to operate the steam plant 24 hours per day, seven days per week. Boiler plant personnel shall meet the qualification standards contained in Office of Personnel Management Qualifications Standards X-119.

The Contractor shall prepare a roster of proposed boiler plant personnel, including qualification summaries and all operator certifications for approval by the Officer in Charge (OIC) within fifteen (15) days after contract award. As a minimum, operators shall be capable of performing the following tasks:

(1) Test the operation of the boiler and its control and safety devices periodically on a routine basis in accordance with nationally recognized standards and/or boiler and control manufacturer's written recommendations.

(2) Maintain and operate the equipment in a safe manner and according to nationally recognized standards such as those recommended by the American Society of Mechanical Engineers for boilers.

(3) Operate boiler fuel feed and storage systems and adjust oil feed systems.

(4) Check and adjust feed water pumps and regulators.

(5) Read and check steam and air flow meters, temperature recorders, oil meters, and other indicating instruments and controls.

(6) Fire up boilers, take boilers off the line.

(7) Control water feed rate and blowdown.

(8) Sample water for analysis and take corrosion and scale formation protection action.

(9) Read and interpret process and instrumentation diagrams required for the operation and repair of boiler equipment.

(10) Provide preventive maintenance procedures and perform minor repair tasks.

(11) Maintain operating logs and reports.

(12) Maintain maintenance reports and spare inventory reports.

3.3.2. Watchstanding Requirements:

3.3.2.1. General: The contractor personnel manning the boiler complex outside normal working hours may, at the Contractors option, provide answering service for trouble calls. This shall in no way affect the performance of normal watchstanding duties.

3.3.2.2. Operating Standards: The Contractor shall meet the present operating standard of the steam plant. Boiler efficiency shall be calculated by the ASME input/output method. The procedure for determining the next output enthalpy used in the calculation shall be consistent throughout the term of the contract. The output energy used shall be based on gross boiler production. The input energy calculation shall be based on

standard fuel heating values. The minimum acceptable boiler efficiency shall be 80%. These standards are subject to revision based on changes in further operational conditions of the boiler plant. For example, improvements in the boiler plant that are accomplished at Government expense may require increases in boiler operating efficiencies. Boilers are to be placed on line to meet production demand requirements. The steam pressure shall be maintained at a minimum of 125 PSIG.

3.3.2.3. Operational Emergencies: Operational emergencies such as ruptured mains, loss of boilers, etc., which reduce boiler pressure below 80 percent of normal operating pressure for a period extending beyond 30 minutes, shall be reported to the Officer in Charge. The Contractor will identify the probable cause for the reduction and the estimated time to restore full pressure and steam rate.

3.3.2.4. Special Requirements: Pumps shall be checked hourly for proper operation. Water softeners shall be checked twice each 8 hour shift for proper operation. The hydrogen cycle demineralizer shall be checked twice each shift for mineral content. Chemical tanks shall be refilled as necessary, but at least daily. General housekeeping of the steam plant and oil storage areas shall be provided.

3.3.3. Reports and Records: Detailed reports, records and logs shall be maintained which delineate operator checks and adjustments, normal or abnormal operating conditions, deficiencies or malfunctions, and corrective action taken. All recording charts and required logs shall be filed chronologically and kept in the steam generating plant. This information shall be readily available for inspection at all times. A copy of the boiler log shall be submitted to the Officer in Charge on a daily basis.

3.4. Steam Plant Maintenance:

3.4.1. Boiler Integrity: Any work affecting the structural or pressure integrity of the boilers shall be inspected and certified by a Government boiler inspector prior to returning the affected unit to operation.

3.4.2. Planned Service Outage: When maintenance or inspection require a discontinuation or reduction in production/distribution, the Contractor shall give seven (7) days notice to the Officer in Charge. Notification shall include the date and time of the service reduction or outage and an estimate of when normal service will resume.

3.4.3. Preventive Maintenance (PM): The Government will provide the Contractor with a Preventive Maintenance Program. The Contractor may at his option develop his own PM System. If the Contractor chooses to develop his own plan, it must be submitted to the OIC within forty-five (45) days of contract award. The preventive maintenance plan shall comply with NAVFAC MO-205. Preventive maintenance shall include inspection, cleaning, lubrication, and minor adjustments of steam distribution system components. The Contractor shall submit a PM report for all PM inspections within three (3) working days of the inspection. The report shall identify all items inspected, condition, deficiencies and any additional work required. PM records for each piece of equipment shall be updated as required. PM

records shall be available for Government inspection at all times and shall be turned over to the Government at completion of the contract. If a schedule change is required, the Government will notify the Contractor at least five (5) working days prior to the change.

3.4.4. Annual Overhaul: The Contractor shall submit an annual boiler overhaul plan to the Officer in Charge for approval within forty (40) days of contract award. The plan shall include dates of boiler shut-down, procedures for preparation, estimated dates of inspection, corrective work, and start up. The Contractor shall prepare the boilers and auxiliary equipment for inspection, clean, lubricate and perform minor adjustments as necessary. The boiler inspection will be performed by a certified Government boiler inspector. The Contractor shall notify the Officer in Charge when the boilers are ready for inspection. The Contractor shall provide a boiler operator to accompany the Government inspector during the inspection. The Contractor shall take all corrective action necessary to obtain certification of the boilers. Deficiencies identified by the Government inspector that are beyond the scope of PM shall be classified as service work or specific work and shall be ordered and paid for as defined in the applicable divisions of this specification. The Contractor shall not operate any boiler that does not have a current, valid certification. Boiler certificates shall be maintained in the equipment record files.

3.4.5. Calibration: The Contractor shall calibrate all pressure and temperature gauges annually and attach a self-adhesive seal on each gauge certifying that it has been calibrated. The date of the calibration and the initial of the person performing the calibration shall be noted on the sticker. The gauges shall be calibrated against a standard dead weight tester or a calibrated master gauge. In addition to the normal annual calibration, the Contractor shall recalibrate any gauge which is suspected of being in error. Tests shall be in accordance with applicable provisions of the American Society of Mechanical Engineers (ASME).

3.4.6. Preventive Maintenance (PM): The Government will provide the Contractor with a Preventive Maintenance Program. The Contractor may, at his option, develop his own PM system. If the Contractor chooses to develop his own plan, it must be submitted to the OIC within forty-five (45) days of contract award. Preventive maintenance reports shall be submitted to the Officer in Charge within three days of the completed inspection and shall indicate the equipment inspected, the condition, any deficiencies and any work performed. Pump maintenance shall include the associated motors.

3.5. Fire Hydrants: Every six (6) months, the Government (Fire Department) performs leakage and flow tests of the fire hydrants. The Contractor shall accompany the Government during these tests. Any corrective work identified during these tests shall be handled as service work or as specific work under the applicable divisions of this specification.

3.6. Storm and Sanitary Sewer System Maintenance: The Naval Regional Medical Center sanitary sewer begins at the plumbing fixture and extends to and includes the sewage lift station. NAVPAC drawing 1043538 shows the sewage pump station plans and details.

3.6.1. Preventive Maintenance (PM): The Government will provide the contractor with a Preventive Maintenance Program. The Contractor may, at his option, develop his own PM system. If the Contractor chooses to develop his own plan, it must be submitted to the OIC within forty-five (45) days of contract award. The preventive maintenance plan shall include the dates, locations and services to be performed for the pump station, catch basins, manholes, and syphon pumps. Preventive maintenance shall include inspection, cleaning, lubrication and minor adjustments and shall be in accordance wth NAVFAC MO-210. Preventive maintenance reports shall be submitted to the Officer in Charge within three (3) working days of the inspection. The preventive maintenance report shall indicate the date, location, equipment condition, deficiencies and work accomplished.

3.7. Air and Gas System Operations and Maintenance: The Contractor shall manage and execute an operation and maintenance program for equipment associated with the delivery of medical vacuum, oxygen, nitrous oxide, and compressed air.

3.7.1. Performance Requirements: The Contractor shall establish a maintenance program which shall include periodic inspection, cleaning, adjustment, lubrication, and other minor corrective actions. The program shall be submitted to the Officer in Charge for approval. All maintenance work performed shall be in accordance with the applicable manufacturer's manuals and NAVFAC MO-210.

3.8. Electrical Distribution System: The electrical distribution system consists of substations, power and current transformers, control panels, circuit breakers, safety switches, relays, underground cable runs, and exterior lighting. The contractors responsibility includes the primary feeders running from the boundary between NRMC and MCB Camp Lejeune at the primary tap to the distribution center in the basement of Area E in the hospital and all components therein. Maintenance and operation shall comply with JCAH standards and manufacturer's recommendations.

3.8.1. Emergency Generators: The Contractor shall be responsible for the operation, maintenance, and repair of the emergency electrical generator system. The system consists of 3-900 KW diesel driven emergency generators, each with fuel oil day tanks and associated controls, switch gear, batteries, relays, automatic transfer breakers, instruments, synchronous machines, etc. The generators shall be tested and inspected in accordance with JCAH including a monthly load test of one (1) hour duration. Fuel for the generators will be provided by the government.

3.8.2. Preventive Maintenance (PM): The Government will provide the Contractor with a Preventive Maintenance Program. The Contractor may, at his option, develop his own PM system. If the Contractor chooses to develop his own plan, it must be submited to the OIC within forty-five (45) days of contract award. The PM plan shall include inspection, cleaning, adjustment, lubrication, transformer/circuit breaker oil replacement, and minor corrective action. Preventive maintenance shall be in accordance with established guidelines contained in applicable manufacturer manuals, JCAH and NFPA-76A. Preventive maintenance reports shall be submitted to the Officer in Charge within three (3) working days of inspection.

3.8.3. Exterior Lighting: The exterior lighting system consists of bases, poles, fixtures, control, and regulators. Spot relamping is handled as service work.

3.9. Heating, Ventilating, Air Conditioning, and Refrigeration System Maintenance: The Contractor shall inspect and maintain the HVAC and refrigeration equipment and systems. This work includes the maintenance and servicing of all components and devices, such as compressors, blowers, fans, service valves, dampers, condensers, cooling towers, chillers, pumps, unit heaters, purge units, control systems, duct work, water treatment systems, air handling units, thermostats, piping, motors, evaporators, air filters, and window installed air conditioning units. Refrigeration storage areas include medication, morgue, blood bank, and specimen refrigerators, as well as food refrigerators. All systems and equipment shall be maintained in good, safe, operating conditions, and in accordance with National Fire Protection Association Standards for Hospitals.

3.9.1. Motors, Drive Assemblies, and Fans: The Contractor shall be responsible for removing accumulations of dust, dirt, and grease, and shall make minor corrections or replace parts as necessary to correct deficiencies. Examples are worn, loose, missing, or damaged mechanical or electrical connections or connectors, bent blades, worn or loose belts, unbalanced moving parts, misalignment, excessive noise and vibration, end play of shafts, and ineffective sound isolators.

3.9.2. Wiring and Electrical Controls: The Contractor shall correct loose connections, charred, broken, or wet insulation, short circuits, loose or weak contact springs, worn or pitted contacts, defective operation and other deficiencies, check insulation for fire safe properties, tighten loose connections and parts; replace electrical wiring having defective insulation, replace or adjust contact springs; clean contacts. The Contractor shall be responsible for all electrical wiring beginning at the load side of the nearest disconnect up to and including the unit.

3.9.3. Temperature Controls: The Contractor shall adjust improper settings, tighten connections, clean contacts, and correct alignment as necessary. The Contractor shall maintain the accuracy of thermostats by comparison to a calibrated mercury thermometer. Operation through a complete cycle shall be observed to check for defective operation. In addition, the contractor will be required to identify to the Officer in Charge any department or equipment user that is not in compliance with energy directives.

3.9.4. Air Ducts, Dampers, Registers, Grilles, Louvers, and Insect and Bird Screens: The Contractor shall remove deposits, tighten or replace defective connections and parts, caulk around flashings to make weather tight, and vacuum all dust from air handling rooms. In addition, the Contractor shall be responsible for dust removal inside of the equipment wherever it is accessible.

3.9.5. Guards, Casings, Hangers, Supports, Platforms, and Mounting Bolts: The Contractor shall tighten loose connections and parts, adjust the level,

if improperly set, or replace defective sound isolators, and correct minor deficiencies and make necessary adjustments. The Contractor shall also remove any sand, dirt, or other debris accumulated on the concrete compressor pad.

3.9.6. Cooling Coils: The Contractor shall remove obstructions to air flow, remove excessive frosting on cooling coils, maintain the correct operation of expansion valves, capillary tubes, and automatic temperature controls. The Contractor shall clean out dust, dirt, and other foreign matter, particularly between fins. This shall be accomplished any time the proper cubic feet of air per minute is not maintained for any of the air handling units. This shall be corrected by using a vacuum cleaner or brush, straightening bent fins, removing obstructions to the air flow, or making the necessary corrections and adjustments.

3.9.7. Condensate Drip Pan and Drain Piping: The Contractor shall maintain the cooling coil drip pan free from sediment, damaged coating, rust, or leakage. Correct as necessary, and blow or flush out drip pipe with air or water to assure that the pipe is open.

3.9.8. Piping: The Contractor shall maintain pipes free from leaks, corrosion, deformation, and material defects. Areas where piping or copper tubing rub against any surface capable of causing damage shall be corrected to prevent rubbing and/or pipe vibrations. All pipe or fittings replaced shall be compatible with the adjoining materials.

3.9.9. Compressors: The Contractor shall remove dirt, dust, and other accumulations, tighten loose connectors and parts, and make minor adjustments if needed. The Contractor shall also be responsible for the maintenance of compressors as deemed necessary.

3.9.10. Air Cooled Condensers: The Contractor shall tighten loose connections, correct minor deficiencies, and replace damaged or missing parts. The Contractor shall be responsible for removing all debris, weeds, shrubbery within three (3) feet of the air cooled condensers to assure unobstructed air flow.

3.9.11. Cooling Towers: The Contractor shall remove external scale and algae by scraping or chemical application; tighten leaky connections; replace defective gaskets; adjust float valve; clean clogged nozzles using a proper size wire; position nozzles and adjust baffles or eliminators; clean sump; check belts, drive shafts, gear housings, water pumps, and bearings.

3.9.12. Lubrication: The Contractor shall be responsible for the lubrication of bearings and moving parts in accordance with the manufacturer's instructions. The sight glass, the noise level, and the oil pressure will be used to determine if the system is properly lubricated.

3.9.13. Periodic Cleaning: The Contractor shall provide cleaning of all equipment rooms, systems, drains, drain piping and pans, condenser coils, oil filters, blower fans, grills, electrical contacts and switch boxes, motor contacts, gauges, drip pans, strainers, dampers, louvers, and

compressor safety controls, etc. Cleaning air filters shall include a check for dust, grease, and other deposits. The Contractor shall replace missing or dirty throw-away filters and adjust those that do not fit properly. Throw-away filters shall be replaced as frequently as necessary to maintain the proper flow of air. The Contractor shall vacuum clean all accessible areas and tracks after the replacement of filters.

3.9.14. Clean Rusted and Corroded Areas to Bare Metal: The Contractor shall clean and repaint previously painted areas with rust inhibitive primer and a finished coat that matches the existing finish. The Contractor shall use a paint scraper, wire brush, power wire brush, or any combination of the above needed to repaint the equipment. Spray paint shall be used only in areas where there is no chance of damage to other property, and a brush will be used where spray painting is not feasible.

3.9.15. Seasonal Start-Up-Shutdown: A start-up or shutdown shall be made, as the season may dictate, or upon request of the Officer in Charge. Seasonal start-up shall include a maintenance inspection for proper operation of each system and items of equipment. Seasonal shutdown shall include the winterizing of cooling towers as well as the shutoff of systems and items of equipemmt. The procedure of start-up, shutdown, or switch over of equipment shall be in accordance with the manufacturer's specifications.

DIVISION 4

MISCELLANEOUS WORK
(PERFORMANCE SPECIFICATION)

4.1. Food Service Equipment: The Contractor shall be responsible for the maintenance and repair of all food service equipment including ovens, freezers, dishwashers, reefers, etc.

4.1.1. All food service equipment shall be maintained to operate as designed for its intended use and be free from defects or missing components.

4.1.2. All work on food service equipment shall be coordinated with Food Service Personnel to cause minimum disruption of service.

4.2. Furniture and Equipment: The Contractor shall be responsible for the repair of non-medical equipment which is not a fixed part of the facility. Included in this requirement are such items as beds, wheelchairs, vacuum cleaners, tables, desks, lamps, etc. All items shall operate as originally designed.

4.2.1. All such items shall be maintained to operate as designed for its intended use and be free from defects or missing components.

4.2.2. All movable items in need of repair shall be delivered to the Public Works Facility by hospital personnnel. When repairs are complete, the Contractor shall notify the department concerned that the item is ready for pickup.

4.3. Instrument Compressed Air System: the Contractor shall be responsible for the maintenance and repair of the instrument compressed air system. The system consists of two air-cooled oil-free air compressors with associated motors, controls, aftercooler, and receiver. The instrument compressed air system supplies air for various control apparatus for the heating, air conditioning, boilers, and steam and condensate systems throughout the hospital. The Contractor shall also be responsible for maintaining the air lines and the controls, including switches and gauges.

4.3.1. The instrument compressed air system shall be maintained to operate as designed for its intended use and be free from defects or missing components.

4.3.2. In the event repairs are required which require any system controlled by the air system to be secured, the Contractor shall be responsible for coordinating the work with the department concerned.

4.4. Warranties: The Contractor shall exercise, administer, and monitor the warranties for facilites and equipment that have been transferred to

the plant property accounts of Naval Regional Medial Center, Camp Lejeune, NC, excluding biomedical equipment.

4.4.1. Documentation: The Contractor shall submit a biweekly report to the OIC containing the information shown in Appendix VI.

4.5. Shipping Crates: The Contractor shall be responsible for the construction of shipping crates for equipment and supplies to be shipped. This work shall be defined as routine.

DIVISION 5

CONTRACT OPERATIONS

5.1. SPECIAL CONSIDERATIONS: The provision of maintenance, repair, and utilities services in a hospital must take into account the very unique environment required for health care operations. The goal of high quality patient care demands a sensitivity to (1) proper scheduling to meet medical and patient needs, (2) sanitation for infection control purposes, and (3) dependable utilities operation to varied patient life support equipment and critical hospital systems.

5.2. TECHNICAL LIBRARY: The Contractor shall develop and maintain a technical library of all technical data related to assigned Public Works and other services. The library will include such items as: Equipment manufacturers' spare parts lists; applicable Government publications and regulations, applicable contractor procedures and facility drawings. The library will contain all technical publications and reference documentation required by the Government, including record drawings and other technical library material. Any existing library which the Government has on hand will be issued to the Contractor for this library.

5.2.1. The Contractor shall maintain the library to the termination of the contract and make the library available to proposers during the bidding period prior to the end of the contract period. The Technical Library shall become Government property at the termination of the contract.

DIVISION 6

ELECTRONIC SYSTEMS MAINTENANCE

6.1. General: The Contractor shall be responsible for performing maintenance of the following electronic systems:

(a) Nurse Call
(b) Televisions
(c) Closed Circuit Security
(d) Intercoms
(e) Broadband Cable
(f) Area Paging/Music

6.2. Maintenance Level: The level of maintenance shall assure that all systems listed in Section 6.1. are free of missing components or defects which would affect the operation or use of the system for its intended purpose. The quality of work and components shall be fully compatible with the existing system.

DIVISION 7

PREVENTIVE MAINTENANCE
(PERFORMANCE SPECIFICATION)

7.1. General: Not withstanding preventive maintenance procedures mentioned elsewhere in this contract, the Contractor shall be responsible for developing and implementing a preventive maintenance program for non-clinical equipment located at the Naval Regional Medical Center, Camp Lejeune, NC. Preventive maintenance is recurring work at scheduled intervals and includes cleaning, lubricating, inspection, adjustments, and minor corrections. As a minimum requirement, the Contractor shall be expected to implement the existing preventive maintenance program developed at NRMC Camp Lejeune by Comtel Systems, Inc. Because of their size and limited copies, the manuals that comprise the preventive maintenance program cannot be mailed to prospective bidders. However, prospective bidders may review these manuals which are located in the Public Works Service Technical Library, during normal working hours.

7.2. Procedures: The preventive maintenance program contains manuals and maintenance task cards which identify the equipment identification numbers, equipment name, building, location with the building, maintenance tasks, frequencies, and lengths of time required to complete the tasks. This preventive maintenance program does not include maintenance requirements for transportation vehicular equipment. Refer to Section 00005, Division 10 for applicable preventive maintenance requirements for transportation equipment.

7.2.1. Equipment Inventory: Each piece of equipment has an identification number assigned. When it becomes necessary to replace equipment items due to age, malfunctions, etc., the Contractor shall continuously update the equipment inventory by assigning identification numbers to the new equipment and eliminating identification numbers assigned to the old equipment. Additional identification numbers are on hand and will be provided by the Government.

7.2.2. Planned Maintenance: Equipment maintenance requirements describe each individual equipment item inventoried, the equipment name, its location and the required maintenance procedures for that equipment. The maintenance tasks to be performed are described in terse command type statements, such a "clean dampers,", or "inspect drive belts". Tasks to be performed are assigned on the basis of good, accepted maintenance practice, manufacturers recommendations, adjusted for the environment in which the equipment is used, and in accordance with the JCAH and NFPA requirements.

DIVISION 8

GROUNDS AND GROUND STRUCTURES MAINTENANCE
(PERFORMANCE SPECIFICATION)

8.1. General: The Contractor shall be responsible for the maintenance of all grounds and ground structures on the NRMC Camp Lejeune compound. Ground structures shall include, but not be limited to, all classes of roads and pavements, drainage structures, parking areas, drives, retaining walls, sidewalks, paths, landing pads, recreation courts, signs, flag poles, and fencing. Ground structures do not include piers, storage tanks, temporary construction roads, roads under construction with associated drainage and fencing. The grounds include approximately fifty (50) acres of grass requiring mowing. Fuel and oil required for work under this section shall be provided by the Contractor.

8.2. Annual Workload Plan: The Contractor shall prepare an annual grounds maintenance workload plan for approval by the Officer in Charge. The plan shall indicate the location and proposed frequency of work taking into consideration the local conditions, climate, and vegetation. The annual plan shall be used as the basis for preparing the monthly workload plan and shall be submitted for approval forty (40) days after contract award. The Officer in Charge shall be notified in writing of all changes to the annual plan. The annual plan shall include information on the method of application for fertilizing, liming, weed control, aerating, and the types of chemicals to be utilized.

8.3. Monthly Workload Plan: The Contractor shall prepare a monthly grounds maintenance workload plan based on the annual plan. The plan shall list, by week, all the requirements and locations of work scheduled for accomplishment during the coming month. The first monthly plan shall be submitted after the contract award and will reflect the work requirements for the next full calendar month. Subsequent monthly work plans shall be submitted in conjunction with the invoice for payment. The Officer in Charge shall be notified of any deviations from the workload plan.

8.4. Grounds Maintenance Standards: There are three different levels of maintenance specified herein; enhanced, normal and minimal. The maintenance level for each area is noted on NAVFAC drawing 4043487. Frequency of work required to meet the maintenance levels shall be determined by the Contractor.

8.4.1. Normal Level Maintenance: Lawn areas shall be maintained in a manner that promotes proper health, growth, rich natural green color, and neat appearance. The lawn areas shall be free of broad-leaved weeds, weedy grasses that present an unsightly appearance, dead vegetation, and debris.

8.4.1.1. Grass Cutting: Grasses are to be maintained in a height range from 2 to 4 inches. Grass cutting is to be accomplished in a manner such that it is free of scalping, rutting, bruising, uneven and rough cutting.

If any bare ground within the limits of an area included in this contract becomes populated with grass or weeds through natural spread, i.e., not artificially planted, the Contractor shall maintain such area(s) as a part of the contract. Prior to mowing, the Contractor shall remove all debris and trash within the maintenance area lodged in shrubs or fences, and along foundation walls. Debris and trash shall include leaves, rocks, paper, portable objects, and rubbish. All surface disruptions (i.e. gopher mounds, mole mounds) shall be raked level and any resulting holes shall be filled prior to mowing.

8.4.1.2. Edging: Edging of sidewalks, driveways, curbs, and other paved surfaces, gardens and other cultivated areas shall be performed to prevent overlapping of pavement. Edging shall be performed so that the grass is not scalped, rutted, or bruised and the final appearance is neat and even.

8.4.1.3. Trimming: Trimming around trees, shrubs, cultivated areas, fences, poles, walls, sprinkler heads, valves and other similar objects shall match the height and appearance of surrounding vegetation.

8.4.1.4. Pruning: All shrubs, bushes, hedges and other cultivated plants shall be pruned according to their natural growth habit, for proper health, attractive appearance, and to prevent interference with pedestrian and vehicular traffic. Pruning shall be done in a manner that:

(1) Prevents growth in front of windows, over entrance ways or walks, and which will obstruct vision at street intersections.

(2) Removes dead, damaged or diseased wood, or structurally weak limbs that may cause a safety hazard.

(3) Evenly forms and balances the shrub, bush or plant. Hedges shall be pruned to maintain their established shape and appearance.

(4) Remove branches that extend over buildings and endanger roofs, eaves, and windows or hang within eight feet in height from sidewalks, parking lots and driveways.

(5) Provide clearance for buses, moving vans and similar vehicles along streets.

(6) Cut back branches that overhang or grow into powerlines. Anticipate the effects of wind on branches which might fall on powerlines. Shape the entire tree rather than notch the top.

8.4.1.5. Replacement of Vegetation: Trees, shrubs, hedges, plants, and grasses shall be replaced upon occurence of death, irrepairable damage or unsightly appearance of existing vegetation. Replacement shall include removal of existing vegetation and providing necessary care to firmly establish the new planting. Shrubs, hedges and plant replacement shall be of identical size, species and numbers. Replacement of trees with trunk diameters of 8 inches or less shall be made with trees of identical species and with trunk diameters of at least 3 inches. Replacement of trees exceeding 8 inches in diameter is excluded from this contract. Grass areas exceeding 1 square foot that require replacement shall be resodded.

3.4.1.6. Weed Control: Weed control shall prevent weed growth in established landscapes, including lawn areas and around trees, shrubs, flower beds, etc. Cracks and joints along or within sidewalks and curbs shall be maintained free of weeds or grass. All chemicals shall be applied in strict accordance with the product's EPA or State registered labeling. All manufacturer instructions shall be followed.

8.4.1.7. Debris Removal and Disposal: Foreign material, cuttings (grass, etc.), leaves, bark, limbs, dead vegetation, paper and trash shall be removed from the maintenance area including walkways, stairways, and curbs within or adjacent to the area. All cuttings and debris resulting from the Contractor operations shall be removed to the sanitary landfill located 5 miles from NRMC Camp Lejeune prior to the end of the work day.

8.4.1.8. Fall Cleanup: Dead leaves shall be removed during the fall months (September to December) to prevent accumulation of leaves exceeding 60% coverage of the ground area.

8.4.1.9. Erosion Control: Soil erosion up to five (5) cubic yards per zone per occurrence from wind or rain shall be arrested by restoring the area to the same condition as the surrounding area. Zones are shone on NAVFAC drawing 4043487.

8.4.1.10. Surface Drainage: Ditches, catch basins, open drainage channels, storm drain inlets and gratings shall be maintained free of vegetation and obstructions. Grass in vegetated channels shall be maintained at a height of 2 to 4 inches. All drainage courses shall be maintained in a free flowing condition.

8.4.1.11. Lawn Fertilization, Seeding, and Weed Control: The Contractor shall provide routine fertilization, seeding, liming and top dressing as necessary to maintain improved grass areas with a thick, uniform growth and uniform green color. Should bare spots become evident, treatment to abate the cause shall be undertaken and measures to start or substitute new growth shall be initiated. The measures will include localized irrigation and will be continued until the new growth is thick and strong. Fertilizer suitable for the purpose shall also be applied at routine intervals (a minimum of two times annually) to the base of trees and shrubs and covered with a mulch of suitable material. Measures will be undertaken by the Contractor to control excessive growth of weeds or fungi. After weed control measures have been applied, no damage to surrounding areas or potential danger to human or animal life shall be evident. The type of herbicides and methods of herbicide application used in performing grounds maintenance shall be subject to local and federal regulations. The OIC shall approve all herbicide applications under this contract. Herbicides used must be registered with the Environmental Protection Agency (EPA), and be approved for use by the appropriate NAVFAC Engineering Field Division Applied Biologist. The Contractor shall submit a list of proposed herbicides and the EPA registration numbers of each. At monthly intervals, a progress report shall be prepared by the Contractor stating amounts of herbicide materials used under the terms of the contract. This report

shall be submitted to the OIC within eight (8) days after the end of each month so that the pertinent data can be included on the monthly Pest Control Summary report, DD Form 1532.

8.4.2. Enhanced Level Maintenance: The requirements for enhanced level maintenance shall consist of all of the requirements for normal maintenance as specified above, with the following changes.

8.4.2.1. Grass Cutting: Grasses shall be maintained in a height range of from 1-1/2 to 2-1/2 inches.

8.4.2.2. Replacement of Vegetation: Grassed areas exceeding 1/2 square foot that require replacement shall be resodded.

8.4.3. Minimal Maintenance Level:

8.4.3.1. Debris Removal: Dead vegetation, material that will support combusion, and trash shall be removed to prevent unsightly accumulation. Collected debris shall be hauled to the sanitary landfill located 5 miles from NRMC Camp Lejeune.

8.4.3.2. Surface Drainage: Maintenance requirements for surface drainage in minimal maintenance levels shall be the same as the surface drainage requirements for normal maintenance level.

8.4.3.3. Weed Control: Weed control in areas of limited growth is to be performed to prevent the encroachment of vegetation into perimeter fence rows and firebreaks. Weed control shall extend, as a minimum, 10 feet on station side of perimeter fence rows and for a width of 10 feet on each side of firebreak roads unless otherwise noted on the drawings or directed by the Officer in Charge. Chemicals used for weed control shall be mixed and applied in strict accordance with the product's EPA or State registered labeling. The chemicals to be used and the rate and method of application shall be specified in the Grounds Maintenance Plan.

8.5. Ground Structures Maintenance Standards:

8.5.1. Roads and Pavements Maintenance: The Contractor shall maintain pavements of all types; this includes heliports, open storage, vehicle servicing and parking areas, sufaced roads, driveways, paths, sidewalks, and recreation courts. Work shall include repair of potholes, surface breaks and checks, shoulders, and associated work.

8.5.2. Maintenance of Curbs and Sidewalks: The Contractor shall repair broken, cracked, or spalled concrete sidewalks. Concrete sidewalks will be kept clear of all vegetation. Deteriorated and broken sidewalk less than 4 square feet and deteriorated and broken curbing less than 2 lineal feet shall be repaired by removing the deleterious material to sound material, compact base material, install forms, and replace with dense-graded asphalt material. All deteriorated and broken sidewalk and curb areas larger than the above shall be removed to the original joint sections and shall be replaced with similar materials as the original construction.

8.5.3. Maintenance of Fences: The Contractor shall maintain all fencing which primarily consists of galvanized chain link fence with outriggers, barbed wire, and woven wire. Maintenance shall consist of replacing fence fabric, replacing/straightening posts, repairing holes in fabric, replacing barbed wire as necessary, and adjusting, sevicing, repairing or replacing gate hardware and closing and locking devices.

8.5.4. Maintenance of Miscellaneous Ground Structures: Miscellaneous ground structures not affixed to permanent structures or specifically mentioned shall be maintained and repaired as required (i.e., walks, hose racks, bleachers, handrails, parking bumpers, curbs, and similar structures), including the maintenance and repair of information and control street signs and markings on streets and parking areas.

8.6. Snow and Ice Removal: Mass snow and ice removal on roads and parking lots are performed by Marine Corps Base Motor Transport Department. The Contractor shall be required to remove snow and ice from sidewalks, catch basins, fire hydrants, and confined areas of parking lots inaccessible to mass removal equipment. The Contractor shall provide and spread sand and/or salt as directed by the OIC.

8.6.1. Mobilization Requirements: The Contractor shall mobilize and begin removal operations within 30 minutes after receipt of notification during normal working hours and within 2 hours outside normal working hours.

DIVISION 9

PEST CONTROL
(PERFORMANCE SPECIFICATION)

9.1. General: The Contractor shall provide effective insect and rodent control for the Naval Regional Medical Center. To be effective, the pest control service must eradicate mosquitoes, termites, ants, roaches, rodents, and other nuisances such as flies, ticks, mites, flugs, spiders, etc. Carcass disposal is part of pest control services. The Contractor shall comply with NAVFAC Instruction 6250.3F and Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) as amended by the Federal Environmental Pesticide Control Act (FEPCA). Pest control services shall be performed during normal working hours.

9.2. Work Scheduling: The Contractor shall conduct an inspection of all buildings, grounds, roads, paved areas, and facilities. Preventive pest control operation shall be based on the evidence of these inspections. Within forty (40) calendar days following contract award, the Contractor shall submit to the Officer in Charge for approval a detailed and complete schedule of the services to be performed. The proposed schedule shall list the type of work to be performed, the areas to be worked and the estimated time to complete the work in each area. Schedules should be posted in advance so that personnel can make arrangements to temporarily vacate the area.

9.3. Work Frequency: In general, the minimum frequency of operation shall be based on the following guide:

9.3.1. Initial inspection of all areas shall be accomplished within forty (40) days of contract award. The inspection reports, operation and recommendations shall be the basis for the pest control system.

9.3.2. Normal pest control operations shall be carried out during the regular work week.

9.3.3. Rodent bait stations shall be inspected weekly and replenished and serviced as required. The transportable garbage containers containing organic matter shall be inspected monthly and treated with insecticide, as required.

9.4. Pesticides: Pesticides from the following list may be used in accordance with label instructions fo the control of specified pests as applicable. Only pesticides registered with the Environmental Protection Agency shall be used.

Anticoagulant rodenticides	0.005% - 0.05	bait (dry)
Baygon (Propoxor)	1.0%	emulsion/solution bait

Diazinon	0.5% - 1.0% 2.0%	emulsion/solution dust
Dimethoate	2.0%	emulsion
Dibrom	0.8% - 1.0%	emulsion
Dichlorvos	0.2% - 0.5%	emulsion/solution
Dursban (Chlorpyrifos)	0.25% - 0.5%	emulsion/solution
Malathion (premium grade only)	1.0% - 5%	emulsion/solution
Pyrenthrum, synergized	0.4% - 0.6%	aerosol
Raticate	0.5%	bait
Resmethrin	1.2%	aerosol
Silica gel	100T	dust

No other pesticides including fumigants may be applied without prior written approval from the Officer in Charge. Use of formulations containing the following pesticides shall not be allowed under any circumstances: DDT, endrin, arsenic, mercury, phosphorus, thallium sulphate and sodium fluoroacetate (compound 1080).

9.5. Spraying Operations: Pesticide spraying shall be performed only on still days and will be stopped when unfavorable weather or other conditions exist which would unduly increase the hazard to personnel or desirable vegetation by draft, runoff, or leaching through the soil. Any Government property or desirable vegetation damaged by the Contractor or his representatives will be repaired or replaced as directed or as specified herein at no expense to the Government.

9.6. Staate and Local Regulatory Compliance: All pesticides, including rodenticides, herbicides, insecticides, fungicides, etc., shall be applied only by personnel holding a valid State license for each category of pest control work involved. Any required state, county, or local permits for possession, procurement, or use of any pesticide used under this contract shall be obtained at no additional expense to the Government.

9.7. Training: Contractor personnel who apply, supervise or manage pest control operations shall be trained and certified as required by the State of North Carolina and shall maintain current certification.

9.8. Reports: Reports shall be provided as required by NAVFACINST 6250.3F, Pest Management Operations in the Naval Shore Establishment. DD Form 1532 shall be submitted by the fifth calendar day of the following month.

DIVISION 10

MAINTENANCE OF CESE
(PERFORMANCE SPECIFICATION)

10.1. General: The Contractor shall be responsible to operate and manage a maintenance garage to inspect, maintain, and repair the Civil Engineer Support Equipment listed in Appendix III.

10.2. Preventive Maintenance: The Contractor shall prepare a preventive maintenance plan in accordance with NAVFAC P-300 for all CESE listed in Appendix III. The plan shall be submitted to the Officer in Charge for approval within forty (40) days after contract award.

10.3. Equipment Downtime: Total annual downtime shall not exceed 7% which includes 2% receiving service and 3% awaiting parts. Parts and material used shall equal or exceed original equipment quality.

10.4. Documentation: The Contractor shall maintain records as listed below:

(1) Shop repair order

(2) Vehicle history jacket

(3) Equipment downtime by equipment classification number

(4) Labor and material expenditure by equipment identification number

10.5. Contractor Personnel: Any contractor personnel operating Government furnished vehicles or equipment shall be tested in accordance with NAVFAC P-300 and must have in their possession a current, valid state drivers license.

10.6. Warranties and Safety Recalls: The Contractor shall ensure that all repair work required on equipment listed in Appendix III that is covered by warranties, safety or other recalls or deficiency reports, are processed in accordance with the provisions of NAVFAC P-300. The Contractor shall pass on to the Government the benefit of all manufacturer's parts or material warranties. It shall be the responsibility of the Contractor to arrange for warranty repairs and transport such equipment to and from the place of performance at no additional cost to the Government.

10.7. Interim/Breakdown Repair: Any equipment contained in Appendix III delivered to the Contractor, or for which the Contractor is notified of a breakdown, as a result of trouble developing between scheduled inspections shall be inspected for validity of complaint and condition of vehicle safety systems. When complaints are validated, necessary repairs for those and any defects noted in the safety systems (brakes, steering, lights,

control, wipers, exhaust) shall be noted on an SRO and the vehicle scheduled for repair as priorities dictate.

10.8. Excessive Repairs: Repairs in excess of the one time repair limits set forth in NAVFAC P-300 shall be brought to the attention of the Government Representative prior to performance. The Government Representative shall determine whether such repairs are necessary, the vehicle should be removed from service and disposed of, temporarily repaired or permanently repaired. The Contractor shall be responsible for all repairs, regardless of level, approved by the Government Representative for performance. This includes work on overage vehicles which are not specifically addressed in NAVFAC P-300.

10.9. Shop Repair Orders (SRO): The Contractor shall ensure that Shop Repair Orders (SROs), NAVFAC Form 11200/3A, are used to document all inspections, service, maintenance, repair and overhaul operations performed on equipment listed in Appendix III. The SRO shall be filled out completely as described in NAVFAC P-300 to include accurate man-hour data and fully descriptive entries for work accomplished. The "IN" date and time entered in block (18) of the SRO shall be the date and time that the Contractor decides, becomes aware of, or is notified that the unit of equipment is not serviceable (down). The "OUT" date and time entered in block (18) shall be the date and time that the using customer is notified that the unit is fully serviceable and ready for pickup; or, if a pool vehicle, is returned to the pool, ready for issue and the dispatcher notified. The Contractor's supervisors signature in Block 37 of the SRO shall attest to the proper completion of all work described and the accuracy of all entries. Upon completion of each job, the third copy (hard) of the SRO shall be turned in to the Government Representative, the yellow copy be provided to the vehicle user, and the white copy filed in the equipment history jacket.

DIVISION 12

SERVICE WORK
(PERFORMANCE SPECIFICATION)

12.1. General: The Contractor shall perform service work in support of the operation and maintenance of utilities, buildings and structures, pest control, transportation fleet, grounds and ground structures. This includes repairing household appliances such as kitchen ranges, refrigerators, garbage disposals and dishwashers. The Contractor's maximum liability for service work shall not exceed the sum of 40 man-hours and $500 in material costs per occurrence. Work exceeding the service work limitation is classified as specific work and will be ordered under the indefinite quantity portion of the contract.

12.2. Work Reception: The Contractor shall establish a reception desk for receiving service work. The reception desk shall be equipped with at least two telephone lines: one to be used exclusively for receipt of service work and the additional line to be used for other business. The reception desk shall be manned during normal working hours. Outside normal working hours, the calls may be received by the on duty boiler operator or other contractor personnel. The Contractor shall screen and classify all calls to determine responsibility and response time. Requested work which is not the responsibility of the Contractor shall be returned to the requestor with notification to this effect. The Contractor will notify the Officer in Charge of any customer requests for alteration work. All alteration work must be approved by the Officer in Charge. Payment for any alteration work performed will be made in accordance with the payment for indefinite quantity work.

12.2.1. Each requirement for service work will be prepared on a separate document (NAVFAC Form 11014/21, Emergency/Service Work Authorization (ESWA). The ESWA will include the following as a minimum:

(a) Date received
(b) Name of requestor
(c) Location of work
(d) Description of problem
(e) Appropriate job order number

When the service work has been completed, the ESWA shall be annotated with the following information:

(a) Date of completion
(b) Actual labor hours expended
(c) Actual work performed including material description and quantity
(d) Signature(s) of individual(s) who peformed the work

12.3. Continuous Maintenance Inspections: The Contractor shall establish a continuous maintenance inspection system to continually identify deficiencies needed to be corrected. Individual deficiencies within the scope of service work shall be reported to the work receptionist for work accomplishment. Scoping estimates shall be provided to the OIC for all deficiencies identified.

12.4. Classification of Service Work:

12.4.1. Emergency: Emergency service work consists of correcting deficiencies which constitute an immediate danger to personnel or property or patient care. The Contractor shall respond to emergency service work within fifteen (15) minutes from receipt of notification during normal working hours or sixty (60) minutes outside normal working hours. The Contractor shall arrest the emergency condition prior to leaving the job site. Additional labor and material required to complete the work shall be provided within the time limitations for urgent service work. In the event labor and material to correct the deficiency exceed the service work limitation the Officer in Charge will be notified and the work will be processed as indefinite quantity work. In no case shall the Contractor leave the site prior to arresting any emergency work. The Contractor shall maintain sufficient off-the-shelf materials to support emergency requirements. Lack of standard material shall not be cause for nonperformance. EXAMPLES: Loss of emergency power to operating rooms in the event of a power outage; loss of air conditioning in operating rooms; loss of power to life support systems.

12.4.2. Urgent: Urgent service work consists of correcting deficiencies which do not constitute an immediate threat to personnel or property but would affect the health or well being of personnel or interrupt operational missions. The contractor shall respond to all urgent work requests within three (3) working days. Urgent service work shall only be accomplished during normal working hours. EXAMPLES: Inoperative heating, air conditioning equipment; water heaters; task lighting in patient care areas; clogged urinals and drains.

12.4.3. Routine: Routine service work consists of work that does not qualify as emergency or urgent. All routine service work shall be completed within ten (10) working days after receipt of call. Routine service work shall only be accomplished during normal working hours. EXAMPLES: Inoperative switches or outlets; dripping faucets; replacement of broken or missing floor and ceiling tiles.

12.4.4. Report: The Contractor shall submit to the Officer in Charge by the end of each month, a report indicating the number of service calls received and the number completed that month. The report shall separately count service work in each of the following categories: building and structures; utilities; transportation; grounds; ground structures; others.

DIVISION 13

PAINTING

13.1. General: This division describes the workmanship required for painting.

13.2. Painting: Interior and exterior painting will be ordered by the Government representative for performance by the Contractor.

13.2.1. Preparation of Surfaces: All dirt, dust, scale, loose particles, disintegrated paint, grease, oil, etc., and any foreign objects shall be removed from all surfaces. Sanding, wire brushing and washing shall be employed as necessary, except that water shall not be used on unpainted wood. Previously painted surfaces not cleaned to bare base material shall not be primed. All new work and surfaces bared by cleaning shall be coated with primer paint prior to receiving finish painting.

13.2.2. Method: Paint, enamel and varnish finish shall be carefully applied with good clean brushes, approved rollers or by airless spraying when approved by the Officer in Charge and then only in vacant rooms. The work shall be conducted so as to avoid damage to other surfaces and public and private property in the area; all damage thereto shall be the Contractor's responsibility for correcting. All painting shall be done with a minimum of two coats. The finish coat shall be smooth and free from runs, sags or other surface preparation defects. Each coat of paint shall be of sufficient thickness to cover completely the previous coat or surfaces. Surfaces not to be painted shall be properly protected. Paint shall be promptly removed from surfaces not to be painted. Thinners shall not be used unless written permission for thinning has been given by the Officer in Charge.

13.2.3. Qualification of Airless Spray Applicators: Application of paint by airless spray shall be accomplished only by firms or persons experienced in the use of this equipment. Prior to application of paint by airless spray, the Contractor shall submit data for the approval of the Officer in Charge demonstrating that the proposed applicators have successfully applied paint with airless spray equipment. The data shall include the names and locations of at least two locations where the applicator referred to above, have used the airless spray method for applying paint. The Contrctor shall indicate the type and design of the airless spray equipment and certify that this method of applying paint has been performed satisfactorily. All equipment shall be in good condition and operate in accordance with the manufacturer's instructions.

13.2.4. Paint Schedule:

EXTERIOR SURFACES

Surface	Spot Prime Bare Areas	First Coat	Second Coat
Wood Surfaces	TT-P-25E	TT-P-105	TT-P-105
Concrete/Masonry Surfaces	TT-P-19	TT-P-19	TT-P-19
Metal Surfaces	TT-P-645	TT-E-489G	TT-E-489G
INTERIOR SURFACES			
Wood Surface (Painted)	TT-P-545	TT-P-1511	TT-P-1511
Wood Surfaces Natural Finish	TT-S-711	TT-V-119	TT-V-119
Metal Surfaces	TT-P-645	TT-P-1511	TT-P-1511
Concrete Surfaces	TT-P-29	TT-P-1511	TT-P-1511
Concrete Masonry	TT-P-29	TT-P-1511	TT-P-1511
Plaster Surfaces	TT-S-179	TT-P-1511	TT-P-1511
Wallboard Surfaces	TT-P-650	TT-P-1511	TT-P-1511
Cloth and Paper covering on insulation	Glue Sizing	TT-P-29	Match adjacent surfaces
New Ferrous Piping (concealed)	GG-P-645	TT-P-645	Exposed Match adjacent surfaces

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